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ASSISTANT EDITOR,
J. T. HODGE, *For Mining and Metallurg.*

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Saturday, May 5, 1849.

Mining.

BY J. T. HODGE.

Having taken charge of the department of this Journal devoted to the Mining interest, I propose to occupy the space weekly allotted to this subject with an account of the various mining districts and smelting operations of the United States. And while I shall discuss the subjects somewhat in detail, including geological descriptions of localities, as well as accounts of actual mining operations and treatment of ores, my aim throughout will be to give that strictly practical character to the articles, which alone is suitable to this Journal. Inquiries into the origin and mode of formation of rocks and minerals will therefore find a place here, only so far as these questions bear directly upon the extent and permanence of mines.

Our *Iron Mines* ranking first in importance, and most closely connected with the Railroad interest, will receive the first and most particular attention. Every week a page or more will be given to this subject; taking it up State by State, describing the mines of each, the different kinds of ores, the number of furnaces, the quantity and quality of iron made by each, with particular notice of its cost and expenses of delivery at its markets. Particularities of forms of furnaces and modes of running them in

different districts, or by different individuals, will be described and explained by the aid of plans. Maps and sections of mining districts and mines are also at hand ready for publication, should it be found expedient to engrave them. For the sake of comparison, notice of foreign processes may occasionally be introduced.

The materials for these descriptions will be furnished in great part from my own observations. These have already provided me with a large amount of matter; and probably this will go on accumulating from the same source. The State geological surveys, in two of which I have heretofore been engaged, have presented in their reports no little matter of practical utility; but this being buried among a great deal that is of no particular interest to the man of business, he is discouraged from the task of culling what he wants. This I shall undertake where my own data are deficient.

From individuals I shall be happy to accept notices which commend themselves for their reliability and interest. Many have already placed me under obligations on this account. Where particular data are wanting, I may from time to time propose through the columns of the Journal inquiries, which those familiar with their subject may do me the favor to reply.

Descriptions of the Lead and Copper mines of the United States are written out, those of Lake Superior being treated with considerable detail, employment for two summers in this region having given me a favorable opportunity for becoming acquainted with its resources. In this connection I shall have the pleasure of presenting to the readers of the Journal a beautiful steel engraving of the Cliff mine, for which I am indebted to the liberality of the directors of the Boston and Pittsburgh Co.

By those engaged in extracting ores—reducing them—buying and selling and consuming the metals, it is hoped that these articles will be found to possess a practical interest, and serve for reference to all inquirers into the actual mineral resources of our country, and the amount of industry and capital they employ.

Iron Ores and the Iron Manufacture of the United States.

No metal presents a greater variety of valuable ores than iron, and none is so universally diffused through all rock formations, and through all districts of country. The United States is particularly favored in the abundance of its iron mines.—

There is not one of the States, and not a very great number of counties even, where the manufacture of iron might not be carried on, if necessary.

The ore occurs as a magnetic and specular oxide in the granite hills of New England, New York, New Jersey, Pennsylvania, Maryland, Michigan, Missouri, North Carolina, Georgia and Tennessee; as a hematite in the metamorphic rocks of New England, Middle and Southern States; as an argillaceous ore and a carbonate in the rocks of the tertiary, carbonaceous, and lower New York groups of the Middle, Western and Southern States; and as a bog ore scattered here and there from Maine to Georgia. This last is sometimes extracted from the bottoms of ponds, which renew their supplies every fifteen or twenty years; and sometimes from more ancient deposits, long since left dry by the waters, that brought together their materials.

The ores of New England and Eastern New York are principally found in the granitic formations and those most ancient stratified rocks, which occur next above them. The few exceptions worthy of note, will be described in the account of the ores of the particular state to which they belong. It will be well, however, to present here a general outline of the great geological group of strata, containing the principal primary ores and hematites of the United States.

Including the whole of the New England States and the northern and eastern parts of New York, this group extends to the southwest, in a narrow strip of country, crossing the Hudson near West Point, through New Jersey, widening out in Pennsylvania to a width of about fifty miles, and through Virginia and the Carolinas, attaining a still greater extent, till it finally ends with the termination of the Allegheny range in Georgia, Alabama and Tennessee. Its eastern boundary is a line connecting the first or lowest falls of all the rivers, which line passes by the cities built at the head of navigation. At these points the waters fall off from the upper granitic platform to the less elevated one occupied by the comparatively recent tertiary strata. The western line of the same belt of country is along some of the eastern spurs of the Allegheny Mountains in Pennsylvania, their continuation, the Blue Ridge, in Virginia, and the same under other names in North Carolina, Tennessee, Georgia and Alabama.

The hematite ores of this group occur principally along or near its contact with the stratified rocks lying next west in the metamorphic slates and quartz

rocks; while the magnetic and specular ores are found in veins in the granites and porphyries.—Among the metamorphic rocks limestones, well adapted as a flux for the hematites, universally occur near the beds of these ores, and near the beds of primary ores some isolated development of the same rock does not fail of being found, or else some other flux as massive garnet rock, or calcareous clays well suited to the peculiar character of the ore—a provident arrangement, which it will be seen is by no means limited to the ores of this group.

Through Canada these granites and metamorphic rocks, as the talcose, mica and clay slates, quartz rock and limestone, continue far west encircling Lake Superior; and on the south side of the lake they are again found productive in the ores, which characterise them at the east.

The Iron Mountain and Pilot Knob of Missouri, are in what appears to be an isolated group of these rocks, which extends back to the Ozark Mountains, and is remarkable for the development of its iron ores.

MAINE.

The first beds of iron ore, we find within the limits of the United States, are near the boundary line to the extreme northeast. One locality on the *Aroostook*, about fifty miles above its mouth, is in the lower calcareous slates, all which in this region are highly metamorphic. The ore is a compact red hematite, and lies in an enormous bed, which like the beds of brown hematite in Berkshire county, Mass., is included in the strata and pursues the same course with them, which varies little from north and south. The thickness of the bed, which I had an opportunity of examining when assistant on the geological survey of the state, is in one place full thirty-six feet, and the ore throughout this thickness is remarkably compact, and free from foreign admixture. Its percentage of iron is stated by Dr. C. T. Jackson to be about fifty-three. It occurs close by the river, in a well wooded country, where limestone is abundant, and good materials for building furnaces are at hand. From its abundance, its composition—remarkably free from all noxious ingredients—its favorable position for mining, and the other circumstances already alluded to, this ore would be of very great value, if at any point available to tide water. But situated in a region so difficult of access, and where the winters are so long and severe, it will long lie comparatively useless. For, as will be seen further on, it is not the abundance nor the excellence of iron ores, that will ensure to them a high value; but this depends upon a multitude of circumstances, which must be weighed and compared, one with another, with the greatest caution before a correct judgment on this point can be formed. The expense of shipping the ore from the *Aroostook* to furnaces on the coast, as in Boston harbor, and there smelting it with anthracite, has been calculated, and found to be too great to warrant farther attention.

Another similar bed of this ore, situated in the same geological position, occurs over the line in *New Brunswick*, near the town of *Woodstock*. It may be contained in the same metalliferous range with the other bed, and this range be found continuous through the intervening country of some seventy to eighty miles in extent. If so, the resemblance to the position of the ores of western New England, before referred to, would be greatly increased. This ore in *New Brunswick*, lying nearer the coast than that of the *Aroostook*, has the advantage of it as to position, and being, beside, in a well wooded district, and near the *St. John* river, arrangements have been

made to work it—a company having commenced to build a blast furnace in the summer of 1848. Its situation is on the river near *Woodstock*, where boats can come directly to the works. The ore bed is only half a mile distant, and so situated that it is an uniform down grade from the bed to the furnace. The ore is estimated to cost, delivered, only thirty cents per ton, and charcoal only four to four and a half cents per bushel. The furnace is about thirty-eight feet high and twenty four feet square at the base, and otherwise of the usual proportions of the hematite furnaces of New England. It is to run by steam power.

Magnetic and specular iron ores occur at various points along the coast of Maine in the granite, trap and porphyry rocks, particularly near *Mount Desert*, but the veins for the most part are thin at the surface. One, however, on *Marshall's Island*, is about three feet thick. The ore is highly magnetic, and judging from my remembrance of the vein and from the specimen I have, it is likely some time or other to receive further attention, for it is directly on the coast, the ore is of the richest character, and the vein can very probably be followed back on the island, and is likely to be found sufficiently large to render it an object to mine the ore for sale. The expense of mining such ore in large veins at established works, is seventy-five cents to a dollar and a half per ton. Should it cost here the latter sum to mine it and put it on board of vessels, the business would pay well if a considerable amount could be procured, for such ore is worth about four dollars per ton delivered to furnaces on the coast. Bog iron ores are also found in the same vicinity, and these would be serviceable to mix with the other ores of more difficult reduction.

In the interior of Maine, magnetic iron ores are of frequent occurrence, but the veins have been little explored. Good specimens have been found in the towns of *Phillips*, *Farmington*, *Raymond*, *Buckfield*, etc. There was one furnace in *Shapleigh*, that did a very small business. Another was in operation near *Eastport*, at a town called *Pembroke*, which run on ores brought from *Nova Scotia*. This, too, has been abandoned; though the forges that were built in connection with it were re-established in 1847, and greatly increased, and a rolling mill erected capable of turning out a large amount of railroad iron. These have now all suspended work, and are now lying idle.

Little attention has however been directed to the smelting of iron ore. At present there is only one blast furnace in the state. This is in a wild, wooded district, about fifty miles back from *Bangor*, on the head waters of the *Piscataquis*. The furnace, which has been built about four years, belongs to the *Katahdin Iron Company*. It is supplied with an ochreous bog ore, which is found in immense quantity close to the site of the furnace. This ore covers the surface of a large dry knoll, lying just beneath the soil; as this is removed, the great deposit of yellow ochreous ore is exposed to view, appearing as one mass of ferruginous matter. When broken into, the pieces of ore are found in the form of roots, limbs, twigs and leaves of trees, the ligneous matter of these having been replaced by oxide of iron without change of form. So easily is it quarried, that its cost on the furnace bank is only forty cents per ton.

It was analysed by *A. A. Hayes*, Esq., state assayer, of *Massachusetts* and found to consist, in 100 parts of—per-oxide of iron 75.6; water 20; sulphuric acid 3. This is equivalent to 52.9 per cent. of metallic iron. By roasting, the water is expelled, leav-

ing the ore nearly a pure per-oxide of iron. It has proved, however, a difficult ore to work, probably from its too great richness and want of an earthy gangue in combination with the oxide of iron, which might readily form a fluid cinder. For a long time disastrous results attended every attempt to reduce it, no suitable flux being found to work with it. Finally, by the use of a siliceous limestone of poor quality, the ore was made to smelt readily—to produce a fluid cinder, and a tolerably good yield, running about five tons per day. The stack is 34 feet high and 9 feet across the boshes, and is blown with hot blast.

When working hot the furnace makes very soft iron, and of rather peculiar character. When this is mixed with hard iron it has a remarkable tendency to soften the whole. A considerable portion is of the quality called "*Extra No. 1*," a variety of iron but little known even among those in charge of the furnaces producing it. It resembles closely hard iron, and is generally thrown among the forge pig, the reputation of which it is not a little calculated to injure; for it is in fact a good foundry iron, and works with difficulty in the puddling furnace. A further notice of this will be given in the description of the *Crown Point Furnace* of *New York*.

Running cold the furnace makes high iron; but little, however, that is suitable for forge use.

Hard wood is abundant all around the works.—Charcoal is valued at only the expense of preparing and delivering it. Estimating this at 4½ cents the bushel, the ton of iron will cost as follows, no allowance being made for the uncertain additional expenses attending the remoteness of the locality from settlements, nor for those resulting from the difficulties attending the reduction of the ores.

Ore, 2½ tons at 40 cents.....	\$1 00
Charcoal, 150 bushels at 4½ cents.....	6 75
Flux, say 50—Labor, 2 50.....	4 00
Interest, Superintendence and Repairs.....	3 00
	\$13 75

The cost of transportation to *Bangor* varies with the season and the state of the roads from \$6 to \$8 per ton. As the quality of the iron is not superior, even for foundry purposes, it is not carried to the great markets of the country. For supplying the demand in the immediate region of the works its manufacture on a moderate scale may be profitable.

Were the furnace steadily run, its capacity might be estimated at 1500 tons per annum; which would represent the production in pig iron of the whole State.

NEW HAMPSHIRE.

The ores of *New Hampshire*, like those of *Maine*, are generally so situated that the expenses of transportation have rendered them of little value. Only one furnace is in operation, that at *Franconia*, which was established as long ago as the year 1811. The ore is the magnetic oxide, yield sixty per cent. The furnace does but a small business, making only two and a half tons of iron a day. Charcoal is abundant; that made from hard wood costing only four cents per bushel. One hundred and sixty bushels are consumed to the ton of iron. Dr. Jackson states in the Geological Report, that the ore costs six dollars per ton, of which the extraordinary sum of \$5 is for mining. The furnace works with cold blast, and is estimated to be in operation from sixteen to twenty-six weeks per annum. The statistics do not indicate a very skillful management, and it is probable that the remoteness of the site from any large market would not warrant a more vigorous prosecution of the work. There are several veins of the ore, but the largest do not seem to average more than

three feet in thickness; being situated, however, on the side of a mountain, the expense for drainage has been little. The wall rocks are gneiss, to the stratification of which the veins conform.

It may be interesting to note here the process as conducted in the year 1830, described by Professor C. U. Shepard in the XVIII vol. Silliman's Journal. The works are situated 140 miles northwest from Boston. The two manufactories then in operation were each about four miles from the mine. Ore cost delivered and cleaned, \$1 75 per ton; yield of pig iron 50 per cent; of bar iron, made directly from the ore in a Catalan forge, 33 per cent. The annual product of the works was 300 tons bar iron and 300 to 350 tons pig. Principally consumed in the country, and the balance transported to Boston, at an expense down the Connecticut River of \$12 per ton, or over land \$25. At Franconia bar iron sold for \$112 and pig iron for \$40 per ton.

Other localities of iron ore are at *Piermont* on the western border of the state, where beds of an excellent micaceous specular ore are represented to occur of sufficient capacity for working. And again at *Bartlett* on the eastern border of the state, where are found inexhaustible beds or veins of the mixed specular and magnetic oxides. Both these localities possess great facilities for the manufacture of iron; but the disadvantages of a long inland transportation to any large market, which with those consequent to the severities of a high northern latitude, increased not a little by the great elevation of the country above the level of the sea, will probably long render them comparatively unavailable. Railroads, however, have now been commenced from the coast, which will pass—one of them within a few miles of *Piermont*—and the other to *Conway*, within twelve or fifteen miles of the mines of *Jackson* and *Bartlett*, so that the objection arising from expense of transportation will soon be in a degree overcome.

Hot Blast Patent Suit.

A suit was tried before the Circuit Court of the United States, at Trenton, New Jersey, Judge Greer of Pennsylvania presiding, in the first week in April, of some interest to iron manufacturers. It was brought by Charles C. Alger, Esq., of Stockbridge, Mass., against the Hon. Joseph E. Edsell, of Hamburg, for an infringement of the patent granted the former for his peculiar arrangement of the blast pipes leading from the heating oven at the tunnel head to the tweres. Instead of bringing down the air in pipes placed outside the stack, where they are subject to changes of temperature, induced by the weather, the evaporation of rain, and accumulation and melting of snow, a patent was granted in 18 6 to Mr. Alger for placing the pipes in the body of the stack, between the lining and the stone work. There the great supply of air, the most weighty of all the materials introduced into the furnace, is kept at an equable temperature, tending greatly to the equable running of the furnace.

Mr. Edsell soon after adopted this arrangement, adding to it a capacious box or pipe of cast iron, behind the lining of the boshes, through which also the air passed on its way to the tweres. This he continued to use for 15 months, having made with it 1,390 tons of iron, when this suit was brought.

The testimony on the part of the plaintiff went to show a considerable saving of stock by the use of this arrangement, and an addition to the production of the furnaces using it; but from the complexity of the subject, it was found difficult to define these with exactness. On behalf of the defendant, it was contended by Gov. Haynes and the late Gov. Vroom,

that the arrangement was original with him, and moreover was not Mr. Alger's, in consequence of the box behind the boshes; that it was an injury rather than a benefit, the furnace making a poorer quality of iron with greater consumption of stock than before introducing it.

On the other side, S. P. Staples, Esq., of New York city, assisted by E. N. Dickerson, Esq., of Paterson, N. Jersey, showed that the peculiarity of the arrangement secured to the plaintiff was in actual use in the blast furnace of the defendant;—that adding to this did not alter it;—that the degree of usefulness only could affect the amount of damages;—that continuing to use it when by merely shutting the valve into the oven, the air would pass through cold to the tweres, was *prima facie* evidence and admission of its importance. And, moreover, that the arrangement of the plaintiff was in use at the Franklin Furnace, only three miles from Hamburg, to which the workmen of the defendant went for suggestions relative to the blast pipes before putting in their own.

Before submitting the case to the jury, the court charged first on the general ground of the importance of sustaining the integrity of the patent law. Reference was made to several great discoveries and inventions, which, but for the encouragement and security this law afforded, might have still remained unknown. Publicity being given to all grants of patents, it is to be presumed that one engaging in any manufacturing process would first make himself acquainted with the various improvements of others, recorded in the Patent Office; and that consequently ignorance is no excuse. As to the amount of damages, the jury were to take into consideration the actual benefit derived by the defendant and the injury sustained by the plaintiff, in setting at defiance his patent rights, in the event of their finding for the plaintiff.

The jury after a short absence returned with a verdict for the plaintiff of \$350 damages; which is equivalent to 25 cents on the ton of iron made while in the use of the patent arrangement. Another suit, it is understood, is already entered against the same defendant for the use of this arrangement for two years longer than the time recorded in the above trial.

Gold in Canada.

The existence of gold in Canada has been known for several years past to those familiar with its local history, and some months ago the scientific world was made acquainted with the fact through Silliman's Journal of September 1848, (page 375), communicated for publication by Mr. Hunt, connected with the Geological Survey of Canada. The information thus given was comparatively meagre in its details, serving only to put the public mind upon inquiry.

We have just been favored with a very interesting document on the subject of this Canada gold, in the form of an extract from the "REPORT OF PROGRESS OF THE Geological Survey of Canada for 1847-'48," by W. E. Logan, Esq., Provincial Geologist. This Report has just been laid before Parliament by the Governor General, and ordered to be printed.—We are enabled, through the kindness of a friend, to present our readers with the extracts in question, in advance of its publication in Canada.

The Geological Survey of Canada has been several years in progress, and we have been enabled to procure, as they were issued, several most valuable and interesting Reports from Mr. Logan, detailing the result of his labors in the years 1844, 1845, 1846 and 1847, including a special Report on the Copper Mines of Lake Superior. His reputation as a ge-

ologist in England, particularly his labors in examining the coal fields of Great Britain, are well known to scientific men the world over, and are referred to in a complimentary manner in Murchison's great work on the Silurian system.

Mr. Logan has, we believe, in progress an elaborate work on the Geology of this continent, in which he is bringing together all the geological facts yet ascertained, with a view to something like a comprehensive statement of the geological structure of the whole region east of the Rocky Mountains. The Parliament of Canada have made liberal appropriations annually from the public Treasury, to enable him to successfully prosecute the survey of Canada. Having seen many of the specimens of his cabinet, and read his several reports, we have felt the liveliest interest in everything connected with his labors.

After speaking of some localities in Canada where gold had been discovered, and giving certain analyses, showing that the quantity found was too insignificant to justify working, he says:

"It is unnecessary to mention that these results are valueless in an economic point of view, and no allusion to them would have been made beyond a passing notice in stating the produce of the copper, did not the presence of the precious metal in a vein come in aid to illustrate the general character of the region, and in particular an alluvial auriferous deposit, where the quantity may probably prove of more importance. This deposit is in the Seigneurie of Rigaud Vaudreuil, the property of the heirs of the late Charles Etienne Chaussegros de Lery, Esq. The spot is on a small stream called the Touffe des Pins, a tributary, falling in on the right bank of the Chaudiere, about 58 miles from Quebec. Mr. C. de Lery, one of the present proprietors, who six years ago exhibited to me the specimens of gold he had obtained, has informed me that the first piece of the metal was discovered about thirteen years ago, by a daughter of one of the *seigneurs*, and the fact coming to his knowledge, he himself made search, and found another piece in the bed of the stream. The discovery was communicated to the public, through Silliman's Journal, vol. 28, p. 112, in April 1835, by Capt. F. H. Baddeley, of the Royal Engineers, whose zeal in Canadian geology is well known in the Province and elsewhere. The weight of the piece is stated in the Journal to have been 10.63 grains, but this was only a fragment separated from one of the pieces, the remainder of which now weighs 1056 grains. Subsequently to this, Mr. de Lery, from time to time, continued to meet with small lumps and grains, in and about the same spot in the channel of the brook, and up to the autumn of 1846, the value of the whole he had collected by hand, without any process whatever of washing, may have amounted to \$130. The largest three pieces have been weighed by Mr. Hunt, and their weights are 1068 grains, 1056 grains, and 744 grains. Since that period, a slight examination has been made of the deposit, and last season, previous to my visit to the locality, which was late in the autumn, he alluvium had been washed experimentally in small quantities in several places along the banks of the stream with more or less success. But owing to freshets and other circumstances, the amount of work done was insignificant. One washing (the only regular day's work) of sixty bushels by means of a rocker, or species of shaking table, in common use in the southern states, produced 440 grains of gold, which would be equal to about 7 1-3 grains to a bushel, the weight of which bushel would be about 100 pounds. About 75 pounds of gravel, washed in my presence by one of my own men, produced a quantity equal to about two grains to a bushel.—The metal however is so unequally distributed, and so little has been done, that it would be premature to consider the above an average return. I am informed by Mr. de Lery that it has been ascertained by the examination, that the deposit, in parts close upon the brook, presents indications of being auriferous for nearly two miles up the valley, which for that distance has a bearing to the northeast, coincident with the general strike of the stratification, and that in one place near the spot where the first dis-

coveries were made a few particles of gold were found on the south side of the valley, about fifty feet above the bed of the stream, and about 100 yards removed from it. He informs me also that a few particles were met with near the road, which is on the right bank of the Chaudiere, on a small tributary brook, called the Ruisseau Leopard, also running with the stratification, about two miles below the Touffe des Pins, and one piece is reported to have been found higher up on the Chaudiere beyond the Seigniory. The total quantity obtained from the first discovery up to the end of October last year, equals a value of about \$300. In an assay of a small piece of the gold obtained from Mr. de Lery, Mr. Hunt finds it to contain 13.27 per cent. of silver—so that the fineness of the gold would be 20 19-24 carats.

Distinguishing between the vein mines and the deposit mines of Virginia, Professor Silliman remarks:

'The latter contain only alluvial gold, or gold at least disengaged from rock or vein stones; it is obviously not in its original connection; it has doubtless proceeded from the destruction of regular veins or beds, and of the rocks which contained them;—the gold has either remained mixed with the ruins of the rocks and of the veins, or has been transported and scattered, sometimes far and wide, by the moving power of water, and buried at depths more or less considerable, in loose materials. Sometimes the gold is found immediately under the turf or sod; this happens most frequently on hills, but more commonly it is in lower situations, under several feet, or even yards, of soil, clay and gravel, and it is most abundant next the slate which underlies the whole of the loose materials, and which slate is sometimes soft, being in a state of decomposition. When the slate rocks are solid, and their strata stand nearly perpendicular, the gold has been sometimes found in the crevices between natural layers of the rock: at the Whitehall mines, in Spotsylvania Co., the gold extended downwards in this manner, sometimes to the depth of three feet.' * * * 'The largest masses of gold have been discovered near rivulets, or brooks, or runs of water, called in the language of the country branches. In such situations, pieces have been found weighing several ounces, and in North Carolina, several pounds. On a branch at the Whitehall mines, gold to the value of \$10,000, was found in the course of a few days, in a space of twenty feet square, and \$7,000 value of gold was found in Tinker's mine, in Louisa county, in the course of one week. It happens not unfrequently that the vein mines are discovered in consequence of washing the earth, particularly in the branches.'

The deposit on the Seigniory of Rigaud Vaudreuil is of the character above described. In Virginia it would, I presume, be termed a *branch*, and a full investigation of it would probably lead to the discovery of the vein from the destruction of which it is derived. The deposit occupies the centre of the valley in which it exists, which is deep and not very broad, and the amount of detritus varies considerably in different parts of its distribution, while the brook has cut down through it in many places, exposing the glossy surfaced clay slate, and occasional quartzose bands on which it rests. The detritus is a gravel or shingle, of which the pebbles are derived from the various rocks composing the country, at least as far northwestward across the strata as the band of serpentine described as traversing the Chaudiere in the northwest part of the Seigniory, the distance to which is six miles, and it is not improbable some of it may be derived from sources still farther in the same direction. One class of pebbles consists of talcose and chloritic slates, and glossy surfaced clay slates; another, of the various qualities of the rocks which have been described, as mixtures of corneous quartz and diallage, or hornblende, or feldspar; a third, of vein stone quartz, and a fourth, of serpentine. In the smaller parts of the gravel are found grains of chromic iron and crystals of rutile. The serpentine pebbles are often in a decomposed condition on the exterior, giving an adhesive, unctuous, and partially ferruginous clay. A clay of this description is occasionally seen among the pebbles in a thin layer not far removed above the slates, and in some places a deposit of peroxide of iron or of manganese, coating the pebbles and filling up the interstices among them, runs in thin horizontal patches. The pieces and

particles of gold are almost all found towards the lower part of the deposit, and many are discovered in the clefts of the slate, where the plates have been loosened by external causes; but the extent to which the plates have been so loosened is sometimes so small that it would scarcely be supposed they had been separated at all, yet scales of the metal will be found between them. Some pieces are found in the unctuous clay, and among the iron and manganese-coated pebbles, and the gold itself, is sometimes partially covered with a closely adhering film of the hydrated peroxide of manganese. The pieces of gold are all more or less rounded, their original sharp angles and corners, resulting from the mode in which they lie in the vein, having been worn away by attrition. In some of the largest, however, small portions of the vein stone quartz remain firmly adhering.

Unless the gold were scattered to a considerable distance from its source, it would be expected that the *branch* or deposit would observe a general course in some degree parallel with the parent vein; and inversely, the deposit running in a general line for a considerable distance parallel with the strike of the stratification, which coincides with the direction of the veins, it is to be inferred that the vein from which it is derived is not very far removed from the deposit. It is worthy of remark that the positions of the gold bearing vein of the vicinity of Sherbrooke and of the auriferous deposit of the Seigniory of Rigaud Vaudreuil, bear directly for one another in the general strike of the stratification of the intervening country, and that they stand at an equal distance from the outcrop of what is considered the base of the Famine and St. Francis fossiliferous lime stone. The general character of the rocks of the two localities is not unlike; there appears to be less chlorite on the Chaudiere, and more talcose clay state, but there is little doubt they belong to the same formation. The corneous rocks are much nearer the auriferous position on the Chaudiere than on the St. Francis, but there is between the Touffe des Pins and the Famine a band of the same peculiar dingy olive green translucent serpentine mentioned in the general description as occurring on the line of section not very far from the Georgeville limestone, the place of which serpentine on the St. Francis would be between Sherbrooke and Lennoxville, standing there in the same relation to the auriferous vein, that it does to the deposit in the vicinity of the Chaudiere. One or two small quartz veins run under the auriferous deposit of Rigaud Vaudreuil, and it is not improbable that in these or other quartz veins that may be near, the source of the gold will be found. Those displaying hydrated peroxide of iron should be especially examined."

Whether the extent of this deposit will justify washing it for gold, or whether the presence of a vein mine in the neighborhood is sufficiently indicated, does not satisfactorily appear. The extreme caution, which marks all the statements of Mr. Logan in his previous Reports, would lead us to think favorably of this Canadian locality. At any rate it possesses sufficient scientific interest to justify us in giving it some space in our Journal.

In addition to the Report of Mr. Logan, we have been furnished with copies of two communications from Mr. J. P. Cunningham, giving the results of two several explorations made by him of this mine. We have no acquaintance with Mr. Cunningham, except from his Reports, in which he speaks of his home at the South in the United States, and of his acquaintance with the gold regions of Virginia and North Carolina, and of his experience at the copper mines of Lake Superior.

In speaking of the gold mines of Vaudreuil, in a letter addressed to the DeLerys, he says:

"Some of the peculiarities of this country bear a striking analogy to the auriferous formations of Russia, and the Southern States, which required only an investigation in the former, to open one of the most valuable mining regions in the world.

I can safely assert, that the deposit on your Seigniory will bear comparison with many of the richest deposits of the south. I have examined many of

them, and ascertained carefully the results of the washings, and although our operations were conducted upon a very limited scale, being as it were simply an assay, I have no doubt when the mine is regularly opened and a system adopted, that the average proceeds of a year's labor, will fully equal those of the Carolinas or Virginia.

The gold found is remarkably large and easily collected, and there will consequently be no loss by the process of washing.

The extent of the deposit is the next important consideration, the limits of which are not yet determined; if the gold exists in the gravel of the country, it will be found wherever the characteristic formations extend; but if it has originated from some local cause, having an immediate bearing upon the rocks in the vicinity of the stream, the deposit will probably be confined to the country, embraced within the drainage of its tributaries.

I have found it in variable quantities in the valley of the stream commencing at its outlet and ascending two miles; and although our principal operations were confined to a very small section, I feel confident the same successful results will obtain wherever the deposit is tried in that distance.

Having thus given a general idea of the region, I shall now enter more minutely into the detail of the exploration.

On the first day of June last, the waters having subsided sufficiently to allow of the exploration of the head of the creek, on which my former investigations were conducted, I proceeded to define as far as possible, the extent of the deposit, and found that for a distance of two miles, beginning from the river Chaudiere, and ascending the creek, gold existed in the bed of the stream, and that within the first mile of that distance—nearest the river mentioned—a rich auriferous deposit became manifest.

My explorations were also directed to the branch of the stream flowing from the south, to the upper parts of the main branch, the other streams falling into the river Chaudiere, and in fact to the entire North Eastern portion of your Seigniory including the steatite beds.

During my examination of the adjacent hills, on the southern side of the creek, I discovered indications of gold, nearly one hundred yards from the water, and at an elevation of sixty or seventy feet above the level of the stream; this would go far to prove that this deposit is not confined to the creek; but without a further and more minute exploration, its extent or value cannot be estimated, on account of the quantity of drift, which covers the entire face of this portion of the country.

It will be necessary, in order that you may fully understand what I wish to convey, that I should describe in detail, that part of the stream, and the valley and hills, which confine it, in which the greatest auriferous indications were observed; this comprises an extent of about two miles, bounded on each side by hills, of comparatively similar elevation, enclosing a valley, varying from fifty to three hundred yards in width, its general direction is from east to west, and the stream itself falls from sixty to seventy feet per mile, consequently there is little sinuosity in its course. The lower section of the valley, about half a mile in extent, consists of flats, and varies from one hundred to three hundred yards in breadth, those flats are composed of gravel and the debris of the surrounding rocks, covered with two or three feet of sand or clay, and may be from six to twelve feet in depth, resting on the rock in place; from this to the Falls of the Creek, a distance of half a mile, the stream has cut a channel through the shales and sandstones, which are everywhere exposed, and the remainder of the distance, for a mile or more, consists of beds of gravel, where the rocks are seldom seen "in situ."

The first portion described, consisting of that part nearest the river Chaudiere, was that to which my attention was most particularly directed, where I had sunk a number of pits, and from which I obtained such satisfactory results.

The first gravel tried, was from the surface, and about fifteen feet above the level of the waters, it yielded twenty pennyweights of gold in three hundred bushels of gravel, the last trial was made from the gravel above the slates, with the debris of the slates themselves, this yielded eighteen pennyweights, eighteen grains of gold from sixty bushels.

In the deposit mines of the Southern States, one

pennyweight of gold to each hand employed per day, is considered good work, and the mine yielding such results a rich one. Their calculation is, if one hundred men are employed, they will have five of those machines in operation, these at an average of three hundred bushels per day, will give a return of 1 3/5 grains per bushel or one pennyweight to the hand.

The average of the washings from our experiments, as given, amounts to 2 7/12 grains per bushel being very nearly one hundred per cent. more than the mines I have instanced above.

When you take into consideration the very unfavorable circumstances under which I operated without one experienced hand and almost totally obstructed by water, by which means the material washed, could not be taken from where the most favorable indications appeared, you cannot but feel satisfied with the complete success of the exploration.

It will be borne in mind, that the first discoveries made, before mine were confined to a small space in the bed of the creek, not more than 40 or 50 feet square, the gold found amounted to 300 pennyweights, the principal part of which was found in the open crevices of the slates.—This yield is unprecedented.

It has been observed on the opening of the Southern mines, that where pieces of 30, 40 or 50 pennyweights have been found, that invariable pieces of much larger weights have followed, you succeeded in finding pieces of the above weights, and there is every reason to believe the same rule will hold good here as well as elsewhere."

At the time when so much inquiry is made in regard to gold mines, this locality in Canada may be worth the attention of those engaged in mining pursuits. Its proximity and the cheapness and abundance of labor in Canada, will render the working of this mine a matter of comparatively little difficulty.

Culture and Manufacture of Cotton.

In our last paper we spoke of a new work on the Culture and Manufacture of Cotton, by GEN. CHAR. T. JAMES, of Providence, which we had been permitted to read in manuscript, and which has just come to hand in a pamphlet of 68 pages.

This work is addressed to HAMILTON SMITH, Esq., of Louisville, Kentucky, and entitled "*Practical Hints on the Comparative Cost and Productiveness of the Culture of Cotton, and the Cost and Productiveness of its Manufacture. Addressed to the Cotton Planters of the South.*" The work has not been circulated in New England, but several thousand copies have just been forwarded to different parties at the south and west, which we are quite certain will attract no little attention. The people of the cotton-growing states have not been informed as to the amount of profit they have been and are still paying to the manufacturers of Great Britain and the Northern States, upon all the manufactured articles they consume. This work of General James places this matter in so strong a light, that they cannot fail to be aroused by it to vigorous exertion to introduce the manufacture along side the production of cotton.

After devoting some twenty pages to the discussion of certain matters of political economy, Gen. James takes up the question of the comparative profit of the raising and manufacture of cotton,—which we cannot give in better terms than in his own language:

The latest official tabular statement to which we have access, of the amount of cotton produced in the world, is that made in the office of the United States Secretary of the Treasury, in the year 1834, for the use of Congress.

By this table, which is sufficiently correct for all practical purposes, it appears that the total amount of cotton raised in the world was 900,000,000 pounds; of which 460,000,000 pounds, 10,000 pounds more than one-half, was the product of the United States. Since that period, the culture of the article in the West Indies has almost ceased. The production in the East Indies rapidly increased during a few

subsequent years, owing to the very great efforts of the British East India Company; but from repeated failures, it has again become stationary, and will probably never be carried to any great extent. In the year 1839 the entire supply of cotton from India was 46,001,308 pounds. It may possibly now reach 50,000,000 pounds. The other cotton growing countries, viz. Brazil, Mexico, Egypt, and other parts of Africa, and Asia, other than India, and a few smaller districts with those named above, made up, in 1834, the balance of product, say, 440,000,000 pounds. Taking all the circumstances into the account, and especially the cheapness of the product in this country, and the known decline in quantity in some others, it is not probable that the foreign product has increased, since 1834, more than ten per cent. This would now give 484,000,000 for all the world, the United States excepted. In the United States, the result has been entirely different. So greatly have they increased the culture of the article, that their crop for 1848 is estimated, in round numbers, at 1,000,000,000 pounds; and which affords a sure indication, compared with the foregoing statements, that all the rest of the world cannot compete with them, either in quantity or price. Increasing the consumption of the article in Great Britain by ten per cent. from the year 1840 to '48, the quantity for the latter year would be 584,317,424 pounds; an excess of more than 100,000,000 pounds over the entire quantity produced in, and exported from, all the countries in the world, the United States excepted. France, Germany, and other European nations require about 300,000,000 pounds; which, added to the consumption in Great Britain, makes the quantity required in Europe, 884,317,425 pounds. Of this, only 480,000,000 is supplied by India, Egypt, Turkey, Brazil the West Indies, &c., and leaving a deficit of more than 400,000,000 pounds, for which Europe is entirely dependant on the United States. To withhold this supply, would enhance the price in Europe; and, though our labor would cost something more than theirs, our cotton would be so much cheaper, that no European manufactures could compete with us. Almost the only reason why no other country has extended its cotton culture as ours has done, is because no other one can raise the article at so small a cost. This circumstance has almost annihilated the culture of cotton in the West Indies, and prevented its rapid increase in Brazil. The British E. India Company, and the viceroy of Egypt, with their immense power and resources, have bent their energies to the object, but hitherto, all efforts have failed, and the cotton planters of the United States still hold and maintain their pre-eminence over all those of the rest of the world. With all these advantages, the United States ought to be, emphatically, *the* cotton manufacturers of the world; and the cotton growing states should become the great cotton manufacturing states of the Union. One would think there could be no question that the cotton grower and cotton manufacturer, combined in one concern, with his full supply of the raw material produced on his own soil, might under-sell the European manufacturer, and control, as far as cotton fabrics were concerned, every market in the world. All this may appear chimerical to some, and they may be inclined to make the inquiry, how is all this to be done? The reply is at hand—Manufacture all your own cotton. How can we do this, is the next query, when we produce so much? Again the reply is ready—Others do it for you. You have labor, skill and materials—if you wish for more of labor and skill, they are readily obtained in sufficient quantities to manufacture all the cotton in the world. But we produce too much. True, too much. Then make a proper distribution and application of labor and skill—produce no more than can be manufactured at home. Cast not yourselves in a foreign market, with a redundancy of an article, begging for a purchaser, on the mercy of foreign brokers, speculators, and shavers. But more of this by and by. Let us now inquire which, in respect to the article of cotton, has made the best distribution and application of labor and skill, the United States or Great Britain, as far as the creation of wealth is concerned?

We have seen that according to the best estimates to be obtained, the quantity of cotton imported into the United Kingdom, and consumed by her manufacturers in 1840, was 531,197,659 pounds; of which, at least four-fifths must have been sup-

plied by the cotton growers of the United States. McCulloch, in his Encyclopedia of Commerce, published in London, for 1847, estimates the increase at about fifteen per cent. This estimate would make the British consumption of cotton at present, 610,377,307 pounds per annum. Allowing only the same proportion, or rather less than we have already stated, say now four-fifths of the quantity, to be supplied from the United States, it will amount to 488,701,846 pounds. The present average value of this cotton in England, is not far from 8 cents per pound; and hence, the aggregate cost, to the British manufacturer, of the above quantity received from the United States, would be \$39,096,147 68. At this rate, the highest amount returned to the American cotton planter, would be, say, 488,701,846 pounds, at six cents per pound, \$28,922,110 76—for convenience, say, in round numbers, \$30,000,000. The best cotton lands will not yield more than three hundred pounds per acre, and the general average from year to year, probably does not exceed two hundred pounds. Suppose, however, the quantity, to be two hundred and fifty pounds; there is required, 1,794,807 acres of land to produce it; and as the product will not average more than 2,500 pounds per hand, it will require about 196,480 hands for its culture. The land, at \$25 per acre, is worth \$44,870,175.—The hands (slaves) at \$500 each, are worth \$97,740,000. Thus, the land and slaves together, would amount in value to \$142,610,000. The cost of other necessary appendages, such as cotton gins, presses, horses, mules, &c. will make up at least, with the above, the sum of \$150,000,000, as the capital employed in the production of the above amount of cotton furnished to the British manufacturer. In order to make the estimate high enough for the planter, we will suppose his net receipts to be 6 cents per pound. At that price, the quantity, 480,000,000 pounds, will return him, say, in round numbers, \$29,000,000.

According to the estimate in McCulloch's Encyclopedia of Commerce (English) the value of British cotton manufactures for the year 1847, was about £40,000,000. The estimated increase for the seven years, from 1833 to 1840, was 33 1/3 per cent. At that rate, the value in 1848, would have been about £42,000,000, or \$186,666 666, nearly. It is estimated also, that the amount of capital invested in the business, is about the same as the amount of value of product, per annum. The British manufacturers also employ about 300,000 operatives, and about the same number of hand-loom weavers.

For the above amount of product, it has been seen that the American cotton planter furnishes about 480,000,000 pounds of the raw material, for, at a high estimate, \$29,000,000. The cotton thus furnished, is four-fifths, nearly, of the entire quantity consumed. The capital invested in the production of the cotton, is \$150,000,000. That invested in the manufacture of it, viz. four-fifths of \$187,000,000, in round numbers, is \$149,600,000. In the ratio of capital, therefore, the planter should receive at least £150,000 for his product, whereas, he receives but \$30,000,000. But, the cotton which returns 6 cents per pound to the planter, costs the British manufacturer 8 1/2 cents. At this price, the amount of cost of the cotton, 480,000,000 pounds, is \$40,800,000. Deduct this amount from \$159,000,000, the value of the manufactured product, as above, and you leave \$118,000,000, as the value added to the above quantity of cotton, for which the planter receives but \$30,000,000 at most, on an outlay of capital very nearly equal to that employed by the manufacturer. So much as to the productiveness of British capital employed in manufacturing cotton, and American capital in producing it. Again in respect to the number of hands employed.

We have said that the British employed about 300,000 operatives. To work up four-fifths of the cotton consumed, would therefore require 240,000. Divide the above \$118,000,000 among these, and you will have \$491 69 nearly, as the value of product per hand. Again, divide the net receipts for the planter's cotton, \$30,000,000, among the number of hands, (196,480) required to produce it, and you have but \$153 36 per hand—less, by \$338 23 per annum, for each hand employed in the production of cotton than is realized by its manufacture in Great Britain. True, we have seen that, in the process, the British manufacturer employs also 240,000 hand-loom weavers; making the entire number of persons

employed, 480,000. Well, divide the British net product among the whole number, and you have \$245.84 per head, and leaving yet, an excess of \$92.38 per head in favor of the manufacturer, against the production of the raw material.

The foregoing statistics and calculations are sufficiently striking to arrest the attention of the southern planters, and to put them upon earnest inquiry. We believe they have only to look fully into this question to become, not only the advocates of a protective policy, but to be in fact, the most earnest of its supporters. Cotton goods of the common fineness are now made for the same price in Rhode Island and Massachusetts as in Manchester, and can be produced in Georgia and Alabama and the Southern States, more cheaply than in any part of the world where cotton is not grown.

We confess that we have been surprised at reading the statement of Gen. James, as to the profits of the cotton manufacture in New England; though any one who looks at Lowell or Manchester, N. H. or Willimantic, cannot but see that the profits of cotton manufacture have been great beyond those of any other branch of industry in the United States. We cannot in this number pursue this topic at great length. We shall give further extracts from Gen. James' work in our next issue, with other observations of our own.

Ohio and Pennsylvania Railroad Meeting.

Pursuant to public notice, a large meeting of the citizens of Pittsburgh and Allegheny, relative to the Ohio and Pennsylvania railroad, was held in the rooms of the Board of Trade, on Monday evening, the 23d ultimo, and was organized by the election of

GEN. J. K. MOORHEAD, *President*.

Richard Edwards and Jesse Carothers, *Vice Presidents*.

Reuben Miller, Jr., and B. A. Sampson, *Secretaries*.

The President stated the object of the meeting, after which it was addressed by Solomon W. Roberts, engineer of the Ohio and Pennsylvania railroad, and by John Larwell, and H. B. Wellman, Esqs., of Ohio.

Col. Thomas H. Benton, of Missouri, being present, by request, entertained the meeting in a beautiful and eloquent speech; and when he had concluded, a motion that the thanks of the meeting be returned to him, was unanimously adopted.

Addresses were also made by Mr. Carter, of Stark County, Ohio, and Col. Robinson, President of the railroad company. He also examined the amount of subscriptions to the work in this city and county.

Thomas Bakewell, Esq., then offered the following resolutions. After they had been read, it was agreed to vote on them separately:

Resolved, That the renewal of the efforts of the Baltimore and Ohio railroad company to connect the fertile plains of the great west with the Atlantic by a southern route, and the continued exertions of the New York and Erie railroad company to effect the same great object in a northerly direction, render the completion of the great central chain of railroads from Philadelphia to the Mississippi more than ever essential to the prosperity of the State of Pennsylvania, and especially to the county of Allegheny.

Resolved, That the liberal subscription made by the citizens of Ohio, residing in the counties of Columbiana, Stark, Wayne, Ashland, and Richland, to the Ohio and Pennsylvania railroad, entitle them to the praise and gratitude of their fellow citizens and of this community; and that it is at once the duty and the interest of the citizens of Allegheny county to contribute with equal liberality to the prosecution of this important improvement.

Resolved, That in the opinion of this meeting the true interests of the citizens of Pittsburgh and Allegheny would be promoted by a corporate subscription on the part of those cities, each to the amount of Two Hundred Thousand Dollars, to the stock of the Ohio and Pennsylvania railroad company, as authorized by Act of the Legislature of Pennsylvania,

passed April 5th, 1849, to be made payable in bonds of those cities, exempted by the aforesaid act from all local taxation, none of the bonds to be issued until at least two hundred thousand dollars shall have been subscribed to the stock by individuals in Allegheny county, and as the progress of the work, after it shall have been put under contract may require; and provided further, that the avails of said bonds be applicable to the construction of said road within the State of Pennsylvania.

Resolved, That a committee of three members be appointed to prepare and circulate a brief address to the citizens, setting forth the advantages of this improvement, and urging the importance of their making such subscription thereto, and will insure its speedy completion.

Resolved, That a committee of five be appointed, whose duty it shall be, in conjunction with the Directors of the company, to wait upon the citizens generally, and solicit their subscriptions to the stock of the Ohio and Pennsylvania railroad company, and that the committee act forthwith.

The first and second resolutions were adopted unanimously. When the third was read, Mr. A. W. Foster moved that it be referred back to the Committee, to be reported to a public meeting of the citizens, on next Saturday. The Chair decided that the motion was not in order, and on taking the question on the resolution, it was adopted. The fourth and fifth resolutions were adopted unanimously.

It was, on motion,

Resolved, That the President and Vice Presidents of this meeting be three of the Committee mentioned in the fifth resolution.

Committee under fourth resolution—George Darsie, T. J. Bigham, Wilson McCandless.

Committee under fifth resolution—Jesse Carothers, Richard Edwards, J. K. Moorhead, James Crossan and Thomas Bakewell.

On motion,

Resolved, That the proceedings be published in all the papers in the city friendly to the railroad.

The meeting then adjourned.

J. K. MOORHEAD, *President*.

RICHARD EDWARDS,

JESE CAROTHERS,

REUBEN MILLER, JR.,

B. A. SAMPSON,

Vice Presidents.

Secretaries.

Col. Benton's Speech.

The Colonel said, he had not yet arrived at that age, at which he could say, that he was too feeble to address them; nor could he plead as an excuse that he was too tired to address that meeting. He had had the honor—to him an unexpected one—of being invited to attend this meeting. If it had been a political meeting, he would have excused himself, by saying that he never spoke upon political subjects out of his own bailiwick; yet, as the object of this meeting was one larger than political—as it was characteristic of the age in which we live—as it was utilitarian in the highest degree, he came to this meeting for the purpose of showing that he was in favor of all such great projects.

The President of this meeting had well observed, that as a local question he could not be expected to enter into details, and it was a question with himself whether he would be able to say anything on the immediate subject of the meeting, but he (the chairman) also touched a point which touched him, (Col. Benton) inasmuch as one end of this road pointed to St. Louis, and St. Louis was on the high road, in a straight line, to the Pacific Ocean, and to Canton.

His name had been connected with this question. Thirty years ago, he had not only said it, but wrote it and gave it to those which constitute the monuments that never die—the printing press—and by the printing press it was then written down, that sooner or later, a great national high road would be made from the Mississippi to the Pacific Ocean; that the road would be made, either, immediately, by the help of the Federal Government, or eventually without that help, by the force of circumstances, and the progress of events. (Applause) Every road, then, which pointed towards St. Louis, connected itself with this gigantic idea of the present age—the highway of nations—of Asia, of Africa of Europe, of generations yet unborn. A highway from ocean to ocean—three thousand miles across—

under one law, under one flag, and under one language, from one end to the other. (Applause.)

That great idea was now abroad, walking over the land, and commended itself with such force, to all imaginations, as to create a universal approbation in its favor. He had brought forward a scheme a per centum of the sales of the public lands to effect this object. He was not only for a per centum, but a complete hypothecation of these lands, that this great work might be accomplished. "Go a head was the word," this was the feeling, the force, the power of the American people. (Applause.)

The wonders which we saw in the ancient world, such as the pyramids of Egypt, employing myriads of men—how did they arise? At the command of sovereigns, who, at once, were political and religious tyrants—who had dominion over the conscience as well as over the purse—who commanded the nation, and it came forward, and for three thousand years, had not been able to tell. But America had taken utility for her guide, and her people came forward, not at the instigation of priests and kings, but from a feeling that what they were going to do would benefit themselves and their posterity. (Applause.) So it was with the Western railroad.—The Romans, whom we so much admired, would not go sneaking around a mountain to make a road. They scorned to do that. They must either go over it or through it. And we could rival them in that. This great road would eventually be made by the Government, but if the Government did not make it, the people would.

The hoofs of horses, the tread of men's feet, and the grinding of wagon wheels were making it now. Tens of thousands of people would go to it this year, making the road as they went. (Applause.) Yes, that road would be made; and while both in Europe and America, the vast country beyond the Pacific, remained a sealed book, and the Rocky Mountains were considered an impassable barrier between the United States, and those regions which lay beyond the Rocky Mountains, the time had now come when people from every State in the Union, from every quarter of the globe, were flocking to those regions, carrying with them the implements of industry and improvement, and thus advancing in civilization. By these very people, this route will be established—this road will be made.

Col. Benton here alluded, (as we suppose) to the exertions of Col. Fremont, and his travels through these wild regions, emphatically observing that the child was born, that the man was grown, that some of them were there, in that meeting, who would see all this; for "go ahead," was the feeling, the character of the American people—a people who needed no government to spur them on, but who were, themselves, always and at all times, ahead of the government they had chosen. (Applause.)

Mr. Benton here concluded amidst the loud and rapturous applause of all present—*Pittsburgh Daily Gazette*.

Virginia.

At a meeting of the citizens of Strasburg and vicinity, held in Strasburg, on Saturday, the 15th day of April, 1849, for the purpose of taking into consideration the most suitable measures to be used in procuring the construction of the contemplated railroad from Alexandria to Strasburg, and to appoint delegates to a convention, to be held in the town of Front Royal, Warren County, Virginia, on the 15th day of May next; David Stickley, Esq., was called to the chair, and George Hupp was appointed Secretary.

On motion, the Chair appointed W. Gatewood, Geo. M. Brinker, S. Hupp, Samuel Kendrick and Daniel S. Lee, a Committee to draft resolutions, whereupon the following were reported and unanimously adopted:

Resolved, As the opinion of this meeting that the construction of a railroad from Alexandria to Strasburg, will be of great importance to the people of this section of Virginia, and that to effect so important an object, we will heartily co operate with all others who like ourselves are deeply interested in said improvement.

Resolved, That a delegation of ten persons be appointed to represent this meeting in the convention, to be held in said town of Front Royal.

Resolved, That W. Gatewood, Dr. Geo. M. Brinker, Capt. Isaac S. Bowman, George A. Hupp,

Samuel Kendrick, Col. Daniel Stickley, Capt. Daniel S. Lee, Col. Geo. W. S. Bowman, John S. Hupp and David Stickley, Esq., be appointed delegates to represent this meeting at said convention.

D. STICKLEY, Chairman.
G. A. Hupp, Secretary. [Winchester Rep.]

The public temper is again up for railroads, and the people of the Piedmont country and of the valley are in a state of commotion on the subject. We give the proceedings of a public meeting at Strasburg, in Shenandoah, from which it will be seen that the effort is to be persevered in, to bring the Alexandria road into the valley.

The Piedmont Whig (Warrentown) makes some judicious suggestions as far as the prosperity of its own town is concerned. It suggests the construction of a road from Warrentown to the Rappahannock, to touch the Alexandria and Orange road, and the construction of turnpikes to Thornton's Manasses' and Ashby's Gaps, to secure the trade of the country west. This is its true policy, instead of joining in a scheme which is to render the village a mere passing point for the locomotives. In the one case, Warrentown would be a great depot; in the other, it would have no more consequence than one of the smallest villages in the country. Besides, with a railroad to the neighborhood of the Springs, an immense increase of travel would follow, and the White Sulphur would be a place of increased attraction.

The people of Fredericksburg will be thoroughly aroused to the importance of early and energetic action.—*Ibid.*

The Danville Railroad.

The City Council of Richmond has appointed a Committee to confer with the Board of Public Works, for the purpose of requesting the Board of Directors of the Danville railroad company to call a meeting of the Stockholders, to re-consider the resolution by which the Board was instructed to adopt the most direct route between Richmond and Danville. The importance of bringing the road as near as possible to Lynchburg, with a view of connecting it by a branch road with our great southwestern improvement, is now confessed by all in Richmond. It is believed that a route further north than the one which was rejected may be found and which will bring the road still nearer to Lynchburg. We presume there will be no objection to the call of the meeting, and we trust the resolution referred to will be re-considered and the Board left at liberty to adopt such a route as they think best.—*Virginian.*

North Carolina.

Central Railroad.—The friends of the North Carolina (or Central) railroad had a meeting at Raleigh on Thursday last, Ex. Governor Iredell presided. Speeches were made by the Chairman, Wm. Roylan, Esq., Gov. Morehead, Mr. Thomas, Senator from Davidson in the late Legislature, and Dr. McClanahan, of Chatham.

The opening of books to receive subscriptions for stock, was postponed until the Tuesday or Wake May County Court, when it is proposed to hold another County meeting, for the purpose of furthering the prosecution of the work.

It was resolved to send three delegates from Raleigh, and one from each Captain's district in Wake, to the convention to be held at Salisbury, on the 14th of June next. The formation of an Internal Improvement Association in Raleigh was also recommended. It was resolved too, says the Register, that the North Carolina railroad "shall be built without delay."—*Wilmington Chron.*

Fayetteville and Western Plank Road Company.

As we mentioned last week, the stockholders in this company met at Fayetteville on the 11th inst., and chose a President and directors as follows:

President, Edward L. Winslow. Directors, Chas. T. Haigh, Alfred A. McKethan, Henry L. Myrover, John H. Cook, George McNeill, Thos. S. Luterloh, David A. Ray, Edmund J. Lilly, John D. Starr.

The Fayetteville papers express a decided opinion that the selections were judicious and fortunate for the interests of the enterprise. The salary of the President was fixed at \$500, with his necessary travelling expenses. Mr. Winslow has gone north,

we understand, for the purpose of examining the plank roads there, and procuring information in regard to their construction.

Wilmington and Manchester Railroad.

On the 16th inst., at Whiteville, Columbus county, where there was quite a large gathering of people, the grading of this road from Livingston Creek (Brunswick county) to Whiteville, and a considerable portion between Whiteville and the South Carolina line, was contracted for on terms considered favorable to the company. The contracts were made by Mr. Fleming, resident engineer. The road is located throughout its whole extent, but we are not informed of the exact location.—*Ibid.*

Cape Fear and Deep River Improvement.

The shareholders in the company chartered by the last Legislature to improve the Cape Fear and Deep rivers, met at Pittsboro', Chatham county, on the 14th instant, and elected officers. It is stated that all the stock but about \$10,000 in amount is taken, and this will be very soon, it is expected, so that the company is manifestly in a situation to carry on its intended operations in a prompt and vigorous manner. A resolution passed at the meeting instructs the directors to proceed at once in the contemplated works of improvement.

APPOINTMENTS BY THE SHAREHOLDERS.

SPENCER MCCLANAHAN, of Chatham, President.
B. I. HOWZE, of Wilmington, Secretary and Treasurer.
—THOMPSON, Engineer.

DIRECTORS.

ISAAC CLEGG, } On behalf of the State.
A. S. MCNEIL, }
PETER EVANS, Sr., }
JOHN M. HOUGHTON, } On behalf of individuals.
THOMAS HILL, }

After the foregoing was in type, we received the official report of the proceedings of the meeting. It appears in another part of the paper.—*Ibid.*

Sandusky Harbor.

A committee of our citizens went out in the steamboat Islander to examine into the condition of the harbor. In the channel, there was in no place less than nine and a quarter feet of water, and this but for a short distance, when the water became twelve, fifteen and twenty feet in depth. The channel is very crooked, and we believe somewhat changed from last year, which accounts for the frequent grounding of steamers which endeavor to follow the same channel run in last year.

The committee have discovered a new channel, in running which, by boats going down, a distance of two miles is saved. There was found fifteen and twenty feet of water from the channel in the bay to the lake, except in one place where there is a bar across some two hundred feet in width, on which there is but eight feet water.

The committee have concluded to open this channel, and have about concluded a bargain with a gentleman from Buffalo to dredge it so there shall be 15 feet of water in the shoalest part.

There is water sufficient for the deepest class of boats, and if they get aground it is because they are not in the channel.

The channel is not yet fully staked out owing to the continued blow, but the collector informs us that the remainder of the stakes shall be set at the earliest possible moment.—*Clarion.*

Ashuelot Railroad.

Mr. Field, an experienced engineer, with his assistants, commenced on Monday last the re-survey of the road between this town and West Winchester, for the purpose of locating the line of this road. Mr. Potter who made the original survey, ran three lines, we believe, over part of the route. They are now to be examined, and the best location fixed upon. We learn that the shortest line, which will not require a grade over 15 feet to West Winchester, and 30 feet thence to Vernon, is only five miles longer than the direct route through Brattleboro' and Bellows Falls. Thus, for a sum less than one-half the expense of a direct line up the Connecticut, a road may be built, answering every purpose of the travelling public, connecting the great lines of railway north and south, and accommodating the large and increasing business of the Ashuelot valley. We

look upon the early construction of this road, as no longer a problem; and if the energy and zeal exhibited along the line is met by a corresponding interest and liberality on the line of the Connecticut river, the valley corporation may, this year, secure a communication much more valuable to them than the direct line up the Connecticut, and save a mint of money in these hard times.—*Sentinel.*

Albany and Cohoes Railroad.

At a meeting of the Directors of the Albany and Cohoes railroad, held this day, Tannis Van Vechten, Visscher Ten Eyck, and Watts Sherman were elected Directors to supply vacancies.

The Board now consists of M. T. Reynolds, President, John L. Schoolcraft, Andrew White, E. P. Prentice, James Edwards, James Kidd, Archibald McClure, Tannis Van Vechten, Visscher Ten Eyck and Watts Sherman, of Albany, C. F. Crosby and D. Hamilton of West Troy, and Egbert Egberts of Cohoes.

The subscription books are directed to be opened on the 15th May, at Albany, 17th at West Troy, and 17th at Cohoes.

Manufactures at the South.

We learn from the Georgia papers that the Augusta Manufacturing Company have declared a dividend of 3 per cent. for the last three months, equal to twelve per cent per annum.

If a considerable portion of southern capital were invested in manufactures, we would soon cease to hear complaints about high tariffs and low prices for cotton.

A few weeks since we suggested the formation of companies, by which the weak hands of planters could be profitably employed, and the prices of cotton better sustained. What objections do planters see to this plan of southern operations?

While we leave it altogether to Europe and the Northern States of the Union to regulate the prices of cotton, we cannot expect high rates. We must, in self defence, take the matter into our own hands.—*Republican.*

Georgia.

Central Railroad.—The earnings of the Central railroad for the month of March are:

	1849.	1848.
Freight, up.....	\$22,032 65	\$14,135 12
" down.....	46,237 59	29,802 72
Passage Money.....	6,000 48	5,896 51
Mails.....	1,600 00	1,600 00
Total.....	\$75,879 72	\$51,434 38
	51,434 38	

Increase of 47½ per ct. \$24,445 34

The increase for the four months since the last annual report in December is nearly in the same ratio.

Rutland and Burlington Railroad.

The Rutland and Burlington Railroad has always been, as far as we can judge, a favorite enterprise in Vermont. It furnishes the shortest line of railway from Burlington to Boston, in a distance of 230 miles, connecting with the Cheshire, Vermont and Massachusetts and Fitchburg railroads. From Bellows Falls to Rutland the distance is 52 miles, and from Rutland to Burlington 66 miles.

We learn from gentlemen in the direction of this road, that the laying of the rails is now going on with vigor at both ends of the line. The grading is completed, with the exception of a short distance near the summit at Mount Holly, on which portion a strong force is engaged. Nine thousand tons of rails are already delivered along the line, at points convenient for distribution. The rail used weighs 60 lbs. to the yard, of the T pattern, with what is usually called the pear head shape. We saw at the Trenton Iron Company's works last week, the rolling of the rails for this road in progress, at the rate of about two hundred tons per day. These rails

are 21 feet long, and are a good specimen of railroad iron of American manufacture.

It is understood that 79 miles of this road will be opened in July next, or early in August, 27 miles more in September and the whole line in running order during the year 1849. The company have contracted for twelve locomotives, and a suitable number of cars for the equipment of the road, which will be in readiness as soon as it is in running order.

This vast work, requiring an expenditure of *three millions of dollars*, has been carried successfully forward, against severe competition, by the indefatigable energy, good judgment and business talent of its directors, and the people along the line. With scarcely any encouragement from Boston at the outset, who threw the strength of its support in aid of the Central road, it has relied mainly for its success upon the rich agricultural and manufacturing population in southern and western Vermont. There is scarcely any private enterprise within our knowledge that more fairly illustrates the tenacity of purpose and the unconquerable energy of the New England character.

AMERICAN RAILROAD JOURNAL.

Saturday, May 5, 1849.

Practical Geology and Metallurgy.

JAMES T. HODGE WILL EXAMINE AND report upon Mines and Ores; construct and conduct Blast-furnaces; and give important information as to the best localities for their establishment. To parties desirous of building the nearest furnaces to New York city he can furnish the control of ores, which will warrant the enterprise.

Office at No. 1 New St., corner of Wall. When absent from the city, inquiry may be made at the office of this Journal, 54 Wall St.

Office of the York and Cumberland Railroad, }
York, Pa.

NOTICE IS HEREBY GIVEN, THAT proposals will be received for the Graduation and Masonry of the different sections upon this line of road. The amount of masonry being large, the attention of contractors is specially invited.

Specifications of the work will be ready for distribution at the office in York after the 23d of April, and proposals will be received until the 10th of May, inclusive.

The payments will be made in cash, reserving the usual 20 per cent. until the completion of the contract.

Proposals will also be received for the complete construction of the work, for the whole length of about 26 miles, under the superintendence of the undersigned and his assistants, to do all the Graduation, Masonry and Bridging, etc., to furnish all the materials, iron, lumber, stone, etc., and to complete the work in eighteen months.

The contractors will be required to state for what sum of money they will finish the entire construction of this work, and what portion of this amount they will agree to take in the stock of the company.

By order of the President and Directors,

JOHN McD. GOLDSBOROUGH,
Engineer.

Iron Ores and Iron Manufacture.

Under our mining head, the readers of the Journal will find the first number of a series of articles on the *Iron Ores and Iron Manufacture* of the United States, from the pen of J. T. HODGE, Esq., an accomplished geologist and mineralogist, of the city of New York, who is to be hereafter associated with us as an Assistant Editor of the Journal, for the department of mining and metallurgy.

Mr. Hodge has for many years been engaged in the preparation of a work on the *Iron Ores and Iron Manufactures* of the United States, embracing descriptions in detail of the different localities of ore, the expense of working different mines, the structure and location of the several blast furnaces and the results of their working. This work is to be pub-

lished in a condensed form in the Journal, in a series of weekly papers, conveniently arranged under appropriate heads, with statistical tables of different districts, and such plans and drawings as may be found desirable.

Besides this work on iron, Mr. Hodge is to furnish to the Journal detailed accounts of the *Copper and Lead mines of the United States*, which have been carefully examined by him, with information on mining subjects generally.

Those, therefore, who have been desiring the publication of the works of Mr. Hodge, will be gratified to find them in the pages of the Journal. Of their value to the scientific inquirer, and to the man of business it is unnecessary for us to speak. They will command attention from the interest now felt on these subjects, and from the fact they will be found indispensable to all parties engaged in the iron manufacture. This is the first attempt yet made to give in an elaborate and practical form, a scientific work on the iron ores, the iron manufacture, and mining resources of the whole country.

The richness and the abundance of our iron and coal mines, should lead us to discard at once, as far as possible the use of foreign iron. Every quality of iron wanted for manufacturing purposes in the United States, with perhaps one or two unimportant exceptions, can be produced at our own furnaces.

The present capital engaged in the production and manufacture of iron, is sufficient to supply the entire demand for consumption, if our labor could only be protected from the fluctuations of foreign markets. During the past year the iron manufacturing interest of the country has been compelled to struggle against the extraordinary competition which the prostration of business throughout Europe has thrown upon them, under our present *ad valorem* system of duties.

We look forward with confidence to the time when the entire consumption of iron in the United States shall be supplied from our own mines; and it shall become an important article of export. At the present time the balance of trade in iron is very largely against us. Notwithstanding the reverses which have fallen upon the iron manufacture the past year, the extent and value of this branch of industry at the present time, are not generally understood. Over four hundred and fifty blast furnaces are embraced in the tables prepared by Mr. Hodge; about one-half of which are within the state of Pennsylvania. Maryland, New York and Ohio, have as many as thirty or more each.

To preserve the arrangement of Mr. Hodge's work, we shall furnish the accounts from the different states in the usual order of publication, commencing with Maine in the present number.

This arrangement with Mr. Hodge will not preclude us from giving other mining intelligence, for which the Editor is alone responsible. Whatever is written by Mr. Hodge will appear under his name in the Journal.

Railway Management.

It is an old maxim, that "Every man is to be trusted in his particular calling." We cannot always follow this maxim. In this country, where so much work is to be done, and comparatively so few to do it, the execution of many things must be entrusted to men who have not been trained to the duties they are called upon to perform, and who are selected, as a general rule, for the good sense they display in the management of their own affairs. In the construction of railroads, had we always waited till we could find for directors, men of experience in these matters, many of our best lines would have been

untouched till the present time. Directors of roads, as a general thing, are taken from the section through which the road runs. They are the representatives of those interested in its construction, and must qualify themselves for a discharge of their duties, by the experience that comes with their labors; and though in the outset they are liable to make many mistakes, which often materially increase the cost of the road, yet, with all these disadvantages, our enterprises in railroad construction have been vastly more successful than those of any other country; owing in part to the readiness with which our people fit themselves for any new undertaking to which they may be called, and to the very general interest felt in the construction of roads, and the sacrifices that all classes are willing to make to encourage them.

In the building of roads, the most important thing is the selection of a suitable engineer.—If the right kind of a man is obtained, he should be invested with much greater authority than is usually entrusted to him. A competent engineer knows much better how to construct a road than its directors. To the discharge of his duties he brings, not only his experience, but the aggregate of that of the profession to which he belongs.—He possesses the latest and most improved method to direct in any particular work.—He is not obliged to resort to a long series of experiments to determine his course, and to which his predecessors were compelled to resort, at immense costs and outlay, to gain the knowledge they have imparted to him; the want of which made so many early attempts at road making failures, and which, with the modern improvements, might have been constructed at one-half the original cost. This experience the engineer possesses; while the directors in new roads for the want of it occupy, the same position as the pioneers in railroad construction, and the acquiring of this experience, in the discharge of their duties, would, to a certain extent, involve them in similar expensive experiments and losses.

Again, in all expenditures, true economy consists in knowing when and where the expense should be incurred. A thoroughly constructed work may cost \$10,000. This is perfectly adapted to the purpose for which it was made. A similar article may cost \$9,000, and yet be almost entirely valueless. It may work well for a time, but it involves great expense in keeping it in order, and will certainly be abandoned, sooner or later, for the perfect machine. Thus, the greater part invested in it is lost. True economy, in all cases, consists in doing thoroughly in the onset, whatever is to be done. So with railroads; the construction of a poor road is so much money thrown away; though it may cost four fifths as much to build it as a perfect one. It is a source of constant expense and vexation while in use, and is to be eventually abandoned for a better one. Now there is nothing in which an engineer is more interfered with or thwarted in the discharge of his duty than in the expenditure of the difference between the cost of a good road over a poor one. Directors have a laudable desire for economy. They want to make the best possible show with their money. They have not learned the difference between the *value* of a good and a poor road. They are very often actuated by a petty vanity of gaining a reputation, or making a great show with a little money. Where the duties of the directors are divided, as is the case usually on our roads; they wish to stand relatively well with each other, and with the stockholders. They lack courage to adopt that course which they are satisfied will be best in the long run for fear of immediate unpopularity. They cannot afford so long

a credit to their reputations, where it may take years to do them justice. They are perfectly free to expend up to a certain point that which will make a road barely passible; beyond this they feel that all expended is money thrown away, when it is the very expense that gives value to all that has gone before. Again, in constructions, mere utility in the ordinary use of the word is not the only thing to be consulted. The public demand the display of a certain degree of beauty and taste in railway buildings. Any unsightly work is sure in time to disappear before public disapprobation. Such a building may afford as good shelter to travellers and merchandise as the most ornamental one; yet the public demand something tasteful just as much as they do a smooth road; and all money laid out in one that does not meet this requirement is so much wasted. It will be soon torn down to give place to a better one. Yet on many of our roads that we are now building, directors still persist, where only perhaps a few hundred dollars are involved, in putting up unsightly buildings, in buying old barns and sheds and converting them into depots and station houses, which they will commence tearing down almost as soon as completed. It may be very foolish in the public to require beauty to be consulted in the construction of railway buildings; but as it does require this, and as directors always yield to this demand, it is of importance that they do this once for all in the outset, and not subject themselves to the penalty of double damage for not doing it at the right time.

India-rubber Springs for Railroad Cars.

Among those agents that men have but recently made use of in ministering to their wants, one of the most useful is India-rubber, ranking next in the scale of importance to steam and electricity. There is scarcely any article used in the arts possessed of so many valuable properties, and capable of so many different applications. Its most important properties of elasticity, ductility and imperviousness to water, are well known, and are causing it to be applied to the arts of life in a thousand different ways.

Among the most important of these applications, is that to the Springs of Railroad Cars and Locomotives. For this purpose it is fast superseding the old fashioned steel spring, having already been applied by the New England Car Company to 1400 cars in this country. As its peculiar fitness for this purpose is as yet but little understood, we propose to give some account of these springs, the manner of the preparation and the qualities they are made to possess to fit them for this use. A few days since we had the pleasure of visiting the India-rubber works at Harlem, where these springs are manufactured for the New England Car Company, and examined somewhat in detail the mode of preparing them.

To make these springs, the best quality of South American rubber is used, costing from 28 to 30 cts. per pound. After this is thoroughly washed and cleansed of all extraneous matter, it is mixed with certain mineral or earthy substances, and then fed to large iron rollers heated by steam to about 175°. It is passed between these rollers until the rubber and the mineral substances become thoroughly intermixed; the rubber becoming so softened by the heat as nearly to lose its tenacity; the whole very much resembling putty in its appearance. It is then transferred to other rollers, which are also highly heated, from which it comes in regular sheets or webs, of any given thickness or width. That designed for springs is rolled into very thin sheets, and

is wound on a spindle as it comes from the rollers, till it reaches the size required for the spring. As it is highly heated when it comes from the rollers, it instantly unites with the rubber on the spindle, making one solid mass as fast as wound off. When taken from the spindle, it is then tightly fitted into cast iron cylinders, which are closed by an iron cap, secured by a strong iron bolt running through the cylinder. The cylinders are then placed into a large iron oven, heated by steam up to about 300°, where they remain about nine hours. This process is what is termed curing the spring. Before subjected to this last process, it is very easily indented, and possesses but little elasticity. If it was subjected to this degree of heat without being confined, it would be enlarged to two or three times its former dimensions, and so enormous is the pressure caused, that it often parts the bolts that confine the cap, which are one and a half inch in diameter, or burst the cylinders which have a two inch shell. In the process of curing, all the moisture is expelled, and a chemical union of the ingredients used seem to take place. After the curing is complete, the springs come from the cylinders changed from a gray to a jet black color; their resistance to pressure vastly increased, and their elasticity perfect. Subject to any pressure they return to their original shape as soon as it is removed; so that in most cases, from the appearance of the spring, it is almost impossible to tell that it has been compressed out of its original shape. Neither does the long continuance of the pressure, make any difference. All the moisture being expelled in the curing, it is not affected in any degree by the cold, and if properly cured it is impervious to water. The manner of applying these springs can be seen by referring to the advertisement of the New England Car Co. in another part of our paper. The weight of a common passenger car settles a twelve inch upright spring about one and a half inch. It yields about one half an inch more when it receives its ordinary load. Unlike a steel spring, its resistance increases with the increase of pressure, and it never allows the car to strike the axle, as the steel spring does, when overlaid. Assuming then that these springs preserve their elasticity, their superiority to all others must, we think, be apparent; and we have the testimony of conductors and engineers that the difference between the two can hardly be estimated, as it relieves the car from that unpleasant jar which is so wearing to the nervous system, and which in a few years frequently breaks down the strongest constitution. The preparation used in making them is "Goodyear Patent Metallic India-rubber." Mr. Goodyear's patent consists in the combination of rubber with the various mineral substances, and in combining these substances by subjecting the preparation to artificial heat. This preparation, the exclusive right to use for the springs of cars, patented by Mr. Goodyear, has been purchased by the New England Car Co., and its application to this use was invented by [F. M. Ray in 1844, and subsequently patented by him, under the assignment of which the above company are manufacturing them

The Railroad Journal.

The Railroad Journal has been published for three months and more, by its present proprietors. Having got fairly started on the track, we are anxious to know whether we can get up the steam. At the time of our purchase, it had a respectable subscription list, which we regarded as only giving us room on which to try our working power.

We are happy to say, that the accession to our

list of subscribers and advertisers has been at the rate of more than twenty per week, which has far exceeded our expectation, as we have made no effort to obtain either, beyond our exertions to make the Journal worthy of public confidence.

Our arrangements, to give the friends of the Journal, and of the Railway interest, a work of practical value, by engaging the best writers in the country, in the various departments of industry and of business, are now producing their appropriate results in a rapid increase of our circulation. Our friends who feel an interest in the success of the Journal can still do us many favors by a repetition of their good offices.

We hope, too, our subscribers will agree with us in the advantages of adopting the cash system.

ENGINEERS.

Arrowsmith, A. T.,

Buckfield Branch Railroad, Buckfield, Me.

Berrien, John M.,

Michigan Central Railroad, Marshall, Mich.

Clement, Wm. H.,

Little Miami Railroad, Cincinnati, Ohio.

Fisk, Charles B.,

Cumberland and Ohio Canal, Washington, D. C.

Felton, S. M.,

Fitchburgh Railroad, Boston, Mass.

Ford, James K.,

New York.

Gzowski, Mr.,

St. Lawrence & Atlantic Railroad, Montreal, Canada.

Gilbert, Wm. B.,

Rutland and Burlington Railroad, Rutland, Vt.

Grant, James H.,

Nashville and Chattanooga R. R., Nashville, Tenn.

Holcomb, F. P.

Southwestern Railroad, Macon, Ga.

Higgins, B.

Mansfield and Sandusky Railroad, Sandusky City, O.

Johnson, Edwin F.

New York and Boston Railroad, Middletown Ct.

Latrobe, B. H.,

Baltimore and Ohio Railroad, Baltimore, Md.

Morton, A. C.,

Atlantic and St. Lawrence Railroad, Portland, Me.

McRae, John,

South Carolina Railroad, Charleston, S. C.

Nott, Samuel,

Lawrence and Manchester Railroad, Boston.

Reynolds, L. O.,

Central Railroad, Savannah, Ga.

Roberts, Solomon W.,

Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Robinson, James P.,

Androscoggin & Kennebec Railroad, Waterville, Me.

Schlatter, Charles L.,

Northern Railroad (Ogdensburg), Malone, N. Y.

Stark, George.,

Bost., Con. and Mont. R. R., Meredith Bridge, N. H.

Trimble, Isaac R.,

Philad., Wil. & Baltimore Railroad, Wilmington, Del.

Tinkham, A. W.,

United States Fort, Bucksport, Me.

Thomson, J. Edgar.,

Pennsylvania (Central) Railroad, Philadelphia.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

Williams, E. P.,
Auburn and Schenectady Railroad, Auburn, N. Y.

Williams, Charles H.,
Milwaukee, Wisconsin.

BUSINESS CARDS.

James Laurie, Civil Engineer,
No. 23 RAILROAD EXCHANGE, BOSTON, MASS.
Railroad Routes explored and surveyed. Estimates, Plans and Specifications furnished for Dams, Bridges, Wharves, and all Engineering Structures.
October 14, 1848. 6m*

James Herron, Civil Engineer,
OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.
PATENTEE OF THE
HERRON RAILWAY TRACK.
Models of this Track, on the most improved plans, may be seen at the Engineer's office of the New York and Erie Railroad.

IRON.

Railroad Iron.
THE TRENTON IRON COMPANY ARE NOW turning out one thousand tons of rails per month, at their works at Trenton, N. J. They are prepared to enter into contract to furnish rails of any pattern, and of the very best quality, made exclusively from the famous Andover iron. The position of the works on the Delaware river, the Delaware and Raritan canal, and the Camden and Amboy railroad, enables them to ship rails at all seasons of the year. Apply to
COOPER & HEWITT, Agents.
17 Burling Slip, New York.
October 30, 1848.

Railroad Iron.
THE NEW JERSEY IRON CO'S WORKS AT Boonton, are now in full operation, and can execute orders for Railroad Bars of any required pattern, equal in quality to any made in this country. Apply to
DUDLEY B. FULLER, Agent,
139 Greenwich street.
New York, October 25, 1848.

Railroad Iron.
THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.
THOMAS B. SANDS & CO.,
22 South William street,
New York.
February 3, 1849.

English Railroad Iron.
3000 Tons T pattern Rails in store, and to arrive this Spring—58 and 60 lbs per yard; of an approved pattern, best English make, each bar being stamped with the manufacturer's name, and inspected before shipment at the works in Wales. For sale by
DAVIS, BROOKS & CO.,
68 Broad street.
March 18, 1849. 2m.11

Railroad Iron.
THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. **J. F. WINSLOW, President**
Troy, N. Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md.
November 6, 1848.

Railroad Iron, Pig Iron, &c.
600 Tons of T Rail 60 lbs. per yard.
25 Tons of 2½ by 1 Flat Bars.
25 Tons of 2½ by 9-16 Flat Bars.
100 Tons No. 1 Gaitsherrrie.
100 Tons Welsh Forge Pigs.
For Sale by **A. & G. RALSTON & CO.**
No. 4, So. Front St., Philadelphia.
Sandusky City, Ohio, March 15, 1849. 2m.13

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month. Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.,
45 North Water St., Philadelphia.
March 15, 1849.

Railroad Iron.

THE Undersigned offer for sale 3000 Tons Railroad Iron at a fixed price, to be made of any required ordinary section, and of approved stamp. They are generally prepared to contract for the delivery of Railroad-Iron, Pig, Bar and Sheet Iron—or to take orders for the same—all of favorite brands, and on the usual terms.

ILLIUS & MAKIN.
41 Broad street.
March 29, 1849. 3m.13

Pig and Bloom Iron.

THE Subscribers are Agents for the sale of numerous brands of Charcoal and Anthracite Pig Iron, suitable for Machinery, Railroad Wheels, Chains, Hollowware, etc. Also several brands of the best Puddling Iron, Juniata Blooms suitable for Wire, Boiler Plate, Axe Iron, Shovels, etc. The attention of those engaged in the manufacture of Iron is solicited by
A. WRIGHT & NEPHEW,
Vine Street Wharf, Philadelphia.

Railroad Iron.

RAILROAD IRON & LOCOMOTIVE TIRES
Imported to order, and constantly on hand, by
A. & G. RALSTON,
4 South Front St., Philadelphia.

RAILROAD WHEELS.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED, the Original Inventor of the Plate Wheel with solid hub, is prepared to execute all orders for the same, promptly and faithfully, and solicits a share of the patronage for those kind of wheels which are now so much preferred, and which he originally produced after a large expenditure of time and money.

A. TIERS,
Point Pleasant Foundry.
He also offers to furnish Rolling Mill Castings, and other Mill Gearing, with promptness, having, he believes, the largest stock of such patterns to be found in the country.
A. T.
Kensington, Philadelphia Co., }
March 12, 1848. }

Wanted Immediately.

8000 Tons of Inverted T Rail wanted, of about 60 lbs. to the yard, for laying 80 miles of road, by the Columbus and Lake Erie Railroad Company, and Mansfield and Sandusky Railroad Company, 60 miles of which is new road, and to re-lay 20 miles on the last mentioned road. Proposals will be received until May 15, addressed (under seal) to me, at this place. Proposals are invited for cash on delivery, and also for 7 per cent. bonds, payable in New York or Boston. Delivery may be made at Oswego, Albany, or New York, or at Portsmouth, on the Ohio river, Montreal, Canada, or at Sandusky city. American Iron would be preferred, except good English. Parties proposing, will please name the place preferred for delivery. Delivery to commence as early as June 1st, and complete as early as October 1st, if practicable.
B. HIGGINS, Superintendent, etc.
Sandusky City, Ohio, March 15, 1849. 2m.13

SPRING STEEL FOR LOCOMOTIVES, TENDERS AND CARS.—The subscriber is engaged in manufacturing spring steel from 1½ to 6 inches in width, and of any thickness required: large quantities are yearly furnished for railroad purposes, and wherever used its quality has been approved of. The establishment being large, can execute orders with great promptitude, at reasonable prices, and the quality warranted. Address **J. F. WINSLOW, Agent,**
Albany Iron and Nail Works.

SCHENECTADY LOCOMOTIVE WORKS

SCHENECTADY, N. Y.
THESE Works are in full operation in Manufacturing to order, Locomotive Steam Engines & Tenders, of the best principle and construction of material, using wrought iron heavy frames with pedestals welded thereto, and all parts of the engine made of the best wrought iron, except cylinders, pumps and boxes—obtaining greater durability, and carrying less weight over the road, than engines constructed of cast iron. Wrought Iron Tires made any required size, and Tire Bars bent and welded with dispatch. Chilled Wheels for Cars, Trucks and Tenders, made from the toughest iron. Driving and Tender and Car Wheels fitted to Axles with Brass Boxes and Springs, and Railroad Machinery generally. Manufactured and for sale by
E. S. NORRIS.

April 11, 1849.

P. S. DEVLAN & CO'S Patent Lubricating Oil.

THE Subscribers invite the attention of Railroads, Steamboats, Machinists, etc., to the above article of Oil; they are prepared to supply it in any quantity. Certificates of its superiority over all other oils, from several of the largest Works and Railroads, can be seen at our office. **KENNEDY & GELSTON,**
5½ Pine street, New York,
Sole Agents for the New England States and State of New York. 1y14



INCORPORATED BY ACT OF PARLIAMENT.

NOTICE is hereby given, that an ASSESSMENT OF ONE SHILLING AND THREE PENCE PER SHARE has been levied on the STOCK OF THE UPPER CANADA MINING COMPANY—one half thereof, or Seven Pence Halfpenny per share, being payable, at the office of the Company, in Hamilton, or to Messrs. W. & J. CURRIE, Agents, Wall St. New York, on the First Day of April next, and the other half on the First day of July next ensuing. By order,
J. D. BRONDEEST,
Secretary U. C. M. C. 12tf
Hamilton, 24th February, 1849.

WILLIAM JESSOP & SONS' CELEBRATED CAST-STEEL.

The subscribers have on hand, and are constantly receiving from their manufactory,
PARK WORKS, SHEFFIELD,
Double Refined Cast Steel—square, flat and octagon. Best warranted Cast Steel—square, flat and octagon. Best double and single Shear Steel—warranted. Machinery Steel—round. Best and 2d gy. Sheet Steel—for saws and other purposes. German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps. Genuine "Sykes" L Blister Steel. Best English Blister Steel, etc., etc., etc. All of which are offered for sale on the most favorable terms by
WM. JESSOP & SONS,
91 John street, New York.
Also by their Agents—
Curtis & Hand, 47 Commerce street, Philadelphia.
Alex'r Fullerton & Co., 119 Milk street, Boston.
Stickney & Beatty, South Charles street, Baltimore.
May 6, 1848.

Direct Action Engines FOR STEAMBOATS.

THE PATENT DOUBLE CYLINDERS,

AND ALSO

THE ANNULAR RING PISTON ENGINES,
of Messrs. Maudslay, Sons & Field, of London, may
be built in the United States, under license, which can
be obtained of their agent,

THOMAS PROSSER, C. E.
28 Platt street, New York.

May 6, 1848.

LAP-WELDED WROUGHT IRON TUBES
for Tubular Boilers, from 1½ to 15 inches diame-
ter, and any length not exceeding 17 feet—manufac-
tured by the Caledonian Tube Company, Glasgow, and
for sale by

IRVING VAN WART,
12 Platt street, New York.

JOB CUTLER, Patentee.

These Tubes are extensively used by the British
Government, and by the principal Engineers and Steam
Marine and Railway Companies in the Kingdom.

DEAN, PACKARD & MILLS,

MANUFACTURERS OF ALL KINDS OF

RAILROAD CARS,

SUCH AS

PASSENGER, FREIGHT AND CRANK CARS,

— ALSO —

SNOW PLOUGHS AND ENGINE TENDERS
OF VARIOUS KINDS.

CAR WHEELS and AXLES fitted and furnished
at short notice; also, STEEL SPRINGS
of various kinds; and

SHAFTING FOR FACTORIES.

The above may be had at order at our Car Factory,
REUEL DEAN, }
ELIJAH PACKARD, } SPRINGFIELD, MASS.
ISAAC MILLS, } 1848

Mattewan Machine Works.

THE Mattewan Company have added to their Ma-
chine Works an extensive LOCOMOTIVE ENGINE
department, and are prepared to execute orders for Lo-
comotive Engines of every size and pattern—also Tenders,
Wheels, Axles, and other railroad machinery, to
which they ask the attention of those who wish such
articles, before they purchase elsewhere.

STATIONARY ENGINES, BOILERS, ETC.,
Of any required size or pattern, arranged for driving
Cotton, Woollen, or other Mills, can be had on favora-
ble terms, and at short notice.

COTTON AND WOOLLEN MACHINERY,
Of every description, embodying all the modern im-
provements, second in quality to none in this or any
other country, made to order.

MILL GEARING,

Of every description, may be had at short notice, as
this company has probably the most extensive assort-
ment of patterns in this line, in any section of the
country, and are constantly adding to them.

TOOLS.

Turning Lathes, Slabbing, Planing, Cutting and
Drilling Machines, of the most approved patterns, to-
gether with all other tools required in machine shops,
may be had at the Mattewan Company's Shops, Fish-
kill Landing, or at 39 Pine street, New York.

WM. B. LEONARD, Agent.

Devlan's Machinery Oil.

THE Subscribers, Agents for P. S. Devlan & Co's
"Patent Lubricating Oil"—price 80c. per gallon
4 mos. or 3 per cent off for cash.

We refer to the following certificate of Messrs. Nor-
ris Brothers, in whose works, any one by calling can
see the oil in use and judge for themselves.

NORRIS' LOCOMOTIVE WORKS. }
Philadelphia, April 2, 1849. }

We have been using throughout our Works, during
the last six weeks, "Devlan's Lubricating Oil," and so
far as we have been able to judge from its use, we think
it preferable to the sperm oil generally used, for both
heavy and light bearings.

NORRIS BROTHERS.

For sale by ALLEN & NEEDLES,
22 & 23 South Wharves,
Philadelphia Pa.

LAP—WELDED WROUGHT IRON TUBES

FOR

TUBULAR BOILERS,

FROM 1 1-2 TO 8 INCHES DIAMETER.

These Tubes are of the same quality and manu-
facture as those so extensively used in England,
Scotland, France and Germany, for Locomotive,
Marine and other Steam Engine Boilers.

THOMAS PROSSER,

Patentee.

28 Platt street, New York.

THE NEWCASTLE MANUFACTURING CO.
continue to furnish at the Works, situated in the
town of Newcastle, Del., Locomotive and other steam
engines, Jack Screws, Wrought Iron Work and Brass
and Iron Castings, of all kinds connected with Steam-
boats, Railroads, etc.; Mill Gearing of every descrip-
tion; Cast Wheels (chilled) of any pattern and size,
with Axles fitted, also with wrought tires, Springs,
Boxes and bolts for Cars; Driving and other wheels
for Locomotives.

The works being on an extensive scale, all orders
will be executed with promptness and despatch. Com-
munications addressed to Mr. William H. Dobbs, Su-
perintendent, will meet with immediate attention.

ANDREW C. GRAY,

a45 President of the Newcastle Manuf. Co.

**TO RAILROAD COMPANIES AND MANU-
facturers of Railroad Machinery.** The subscri-
bers have for sale American and English Bar Iron, of
all sizes; English Blister, Cast, Shear and Spring
Steel; Juniata Rods; Car Axles, made of double re-
fined iron; Sheet and Boiler Iron, cut to pattern;
Tires for Locomotive Engines, and other railroad car-
riage wheels, made from common and double refined
B. O. Iron; the latter a very superior article. The
Tires are made by Messrs. Baldwin and Whitney, Lo-
comotive Engine Manufacturers of this city. Orders
addressed to them, or to us, will be promptly executed.

When the exact diameter of the wheel is stated in
the order, a fit to those wheels is guaranteed, saving
to the purchaser the expense of turning them out in-
side.

THOMAS & EDMUND GEORGE,

a45 N. E. cor. 12th and Market sts., Philad., Pa.

**NICOLL'S PATENT SAFETY SWITCH FOR
Railroad Turnouts.** This invention for some time
in successful operation on one of the principal rail-
roads in the country, effectually prevents engines and
their trains from running off the track at a switch, left
wrong by accident or design. It acts independently
of the main track rails; being laid down or removed
without cutting or displacing them.

It is never touched by passing trains, except when
in use, preventing their running off the track. It is
simple in its construction and operation, requiring only
two castings and two rails; the latter, even if much
worn or used, not objectionable.

Working models of the Safety Switch may be seen
at Messrs. Davenport, Bridges & Kirk's Cambridge
Port, Mass., and at the office of the Railroad Journal,
New York.

Plans, Specifications, and all information obtained,
on application to the Subscriber, Inventor and Paten-
tee.

G. A. NICOLLS,
Reading, Pa.

**MACHINE WORKS OF ROGERS KETCHUM
& GROSVENOR, Patterson, N. J.** The un-
dersigned receive orders for the following articles man-
ufactured by them of the most superior description in
every particular. Their works being extensive, and
the number of hands employed being large, they are
enabled to execute both large and small orders with
promptness and dispatch.

Railroad Work.—Locomotive Steam Engines and
Tenders; Driving and other Locomotive Wheels, Axles
Springs and Flange Tires; Car Wheels of Cast Iron
a variety of patterns and chills; Car Wheels of Cast
Iron with wrought tires; Axles of best American re-
fined iron; springs; boxes and bolts for cars.

Cotton, Wool and Flax Machinery of all descriptions
and of the most improved patterns, style and work-
manship.

Mill gearing and millwright work generally, hydrau-
lic and other presses; press screws; callenders; lathes
and tools of all kinds; iron and brass castings of all
descriptions.

ROGERS, KETCHUM & GROSVENOR,
Patterson, N. J., or 60 Wall St., New York.

IRON BRIDGES, BRIDGE & ROOF BOLTS,
etc. STARKS & PRUYN, of Albany, New York,
having at great expense established a manufactory with
every facility of Machinery for Manufacturing Iron
Bridges, Bridge and Roof Bolts, together with all kinds
of the larger sizes of Screw Bolts, Iron Railings, Steam
Boilers, and every description of Wrought Iron Work,
are prepared to furnish to order, on the shortest notice,
any of the above branches, of the very best of Amer-
ican Refined Iron, and at the lowest rates.

During the past year, S. & P. have furnished sever-
al Iron Bridges for the Erie Canal, Albany Basin, etc.
—and a large amount of Railroad Bridge Bolts, all of
which have given the most perfect satisfaction.

They are permitted to refer to the following gentle-
men:

Charles Cook,

Nelson J. Beach,

Jacob Hinds,

Willard Smith, Esq.,

Messrs. Stone & Harris,

Mr. Wm. Howe,

Mr. S. Whipple,

January 1, 1849.

Canal Commissioners

of the

State of New York.

Engineer of the Bridges for

the Albany Basin.

Railroad Bridge Builders,

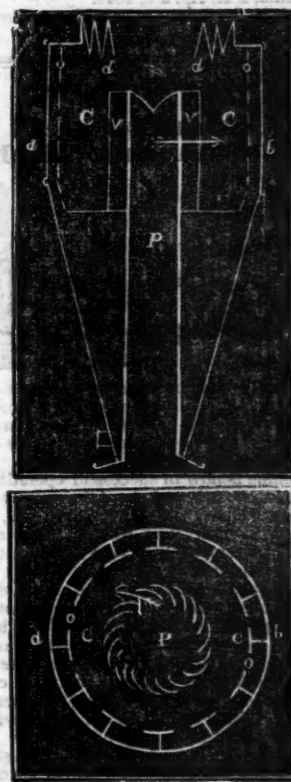
Springfield, Mass.

Engineer & Bridge Builder,

Utica, N. Y.

FRENCH & BAIRD'S

Patent Spark Arrester.



TO THOSE INTERESTED IN RAILROADS.

Railroad Directors and Managers are respect-
fully invited to examine an improved Spark Arrester re-
cently patented by the undersigned.

Our improved Spark Arresters have been exten-
sively used during the last year on both Passenger and
Freight Engines, and have been brought to such a
state of perfection, that no annoyance from sparks or
dust from the chimney of engines on which they are
used is experienced.

These Arresters are constructed on an entirely differ-
ent principle from any heretofore offered to the pub-
lic. The form is such that a rotary motion is imparted
to the heated air, smoke and sparks passing through
the chimney, and by the centrifugal force thus acquir-
ed by the sparks and dust, they are separated from the
smoke and steam, and thrown into an outer chamber
of the chimney through openings near its top, from
whence they fall by their own gravity to the bottom of
this chamber; the smoke and steam passing off at the
top of the chimney, through a capacious and unob-
structed passage, thus arresting the sparks without im-
pairing the power of the engine by diminishing the
draught or activity of the fire in the furnace.

These chimneys and arresters are simple, durable and neat in appearance. They are now in use on the following roads, to the managers and other officers of which we are at liberty to refer those who may desire to purchase, or obtain further information in regard to their merits.

R. L. Stevens, president Camden and Amboy railroad company; Rich'd Peters, sup't Georgia railroad, Augusta, Ga.; G. A. Nicolls, sup't Reading railroad, Reading, Pa.; W. E. Morris, pres't Philadelphia, Germantown and Norristown railroad company, Philad.; E. B. Dudley, pres't W. and R. railroad co., Wilmington, N. C.; Col. Jas. Gadsden, pres't S. Carolina railroad co., Charleston, S. C.; W. C. Walker, agent V. and J. railroad, Vicksburg, Miss.; R. S. Van Rensselaer, sup't Hart and N. H. railroad; W. R. McKee, sup't Lexington and Ohio railroad; T. L. Smith, sup't N. Jersey railroad and transp. co.; J. Elliott, sup't M. P., Philadel. and Wilm. railroad; J. O. Sterns, sup't Elizabethtown and Somerville railroad; R. R. Cuyler, pres't Central railroad, Savannah, Ga.; J. D. Gray, sup't Macon, (Ga.) railroad; J. H. Cleveland, sup't of Southern railroad, Monroe, Mich.; M. F. Crittenden, sup't mo. power Central railroad, Detroit, Mich.; G. B. Fisk, pres't Long Island railroad, Brooklyn, L. I.

Orders for these chimneys and arresters, addressed to the subscribers, care of Baldwin and Whitney, of Philadelphia, will be promptly executed.

The subscribers will dispose of single rights, or rights for one or more States on reasonable terms.

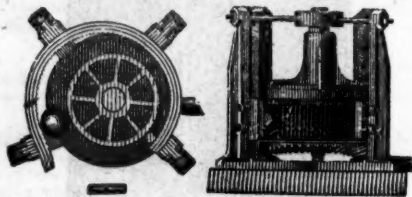
FRENCH & BAIRD.

Philadelphia, Pa., April 6, 1844.

The letters in the figures refer to the article given in the Journal of June, 1844.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous; considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll rounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y.

P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

ENGINE AND CAR WORKS.

DAVENPORT & BRIDGES,

HAVING ASSOCIATED WITH THEM

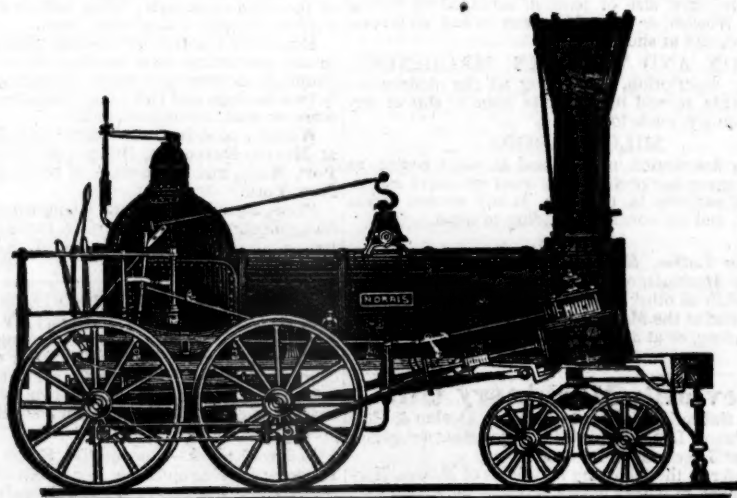
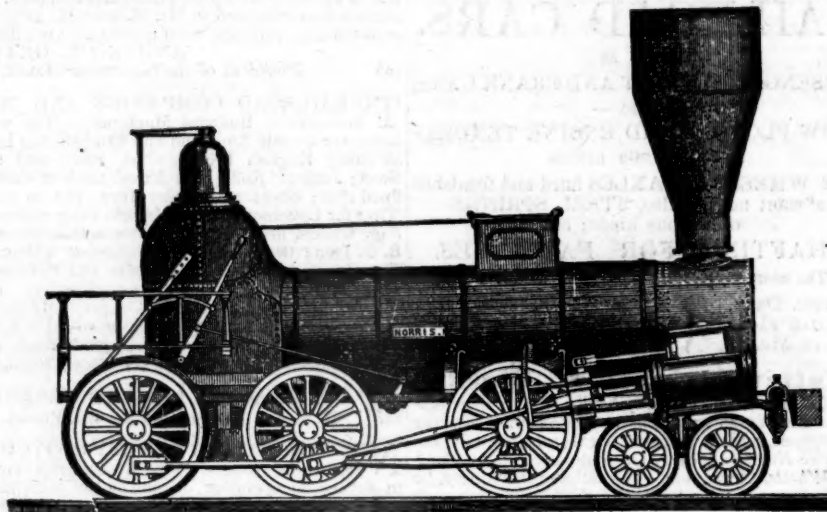
MR. LEWIS KIRK, OF READING, PA.,

And recently enlarged their Establishment, (making it now the most extensive in the United States,) they are prepared to manufacture to order Locomotive Engines and Cars of every description. Stationary Engines, Steam Hammers, Boilers, and all kinds of Railroad Machinery. Also, Castings and Forge Irons of all kinds—including Chilled Wheels, Frogs, Chairs, Switches, Car Axles, and Locomotive Cranks, Connecting Rods, Steel Springs, Bolts, etc., etc. Orders from all parts of the country solicited for Engines and Cars, or any part or parts of the same. All orders will be furnished at short notice, and on as good terms as any manufactory in the country. Coaches pass our works every fifteen minutes during the day, from Brattle St., Boston.

DAVENPORT, BRIDGES & KIRK.

Cambridgeport, Mass., February 16th, 1849.

NORRIS' LOCOMOTIVE WORKS. BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,



THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size.

Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tyres are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS.



RIDER'S PATENT IRON BRIDGE.

THE IRON BRIDGE having been fully tested on the Harlem Railroad, by constant use for about eighteen months, and found to answer the full expectations of its most sanguine friends, is now offered to the public with the utmost confidence as to its great utility over any other Bridge now known.

The plan of this Bridge is to use the iron so as to obtain its greatest longitudinal strength, and at the same time is so arranged as to secure the combined principles of the Arch, Suspension and Triangle, all under such controlling power as causes each to act in the most perfect and secure manner, and at the same time impart its greatest strength to the whole work.

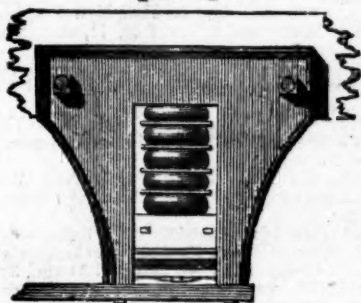
THE IRON RIDER BRIDGE COMPANY are prepared to furnish large quantities of Iron Bridging for Railroad or other purposes, made under the above patent, at short notice, and at prices far more economical than the best wood structure, and on certain conditions, the first cost may be made the same as wood.

Models, and pamphlets giving full descriptions of the RIDER BRIDGE, with certificates based on actual trial from undoubted sources, will be found at the office of the Company, 74 BROADWAY, up stairs, or of W. RIDER & BROTHERS, 58 Liberty Street, where terms of contract will be made known, and where orders are solicited.

November 25, 1848.

M. M. WHITE,
Agent for the Company.

Fuller's Patent India-Rubber Springs.



THERE can now be no ground of opposition whatever to these Springs. The Commissioner of Patents has not only rejected the application for a Patent for a similar Spring, but a Patent has just been granted for an entirely new species of India Rubber, the quality of which can be surpassed by no other kind, as the experiments which have lately been publicly made, have fully proved. No extremes of heat or cold can effect it, nor will any amount of pressure permanently alter its shape. This Patent refutes the statement of the "New England Car Company" as to their sole right to use India Rubber.

The Spring (composed by alternate layers of India Rubber Discs and Metal Plates) is superior to any other form of Spring, for several reasons: It is the lightest, the most simple and most durable—there being less friction in this than in other kind; it can be regulated to any extent desired. A less quantity of Rubber is required in this form to make a good spring than in any other because each disc or ring of India Rubber is firmly supported by metal plates, and forms in itself a distinct spring—nor is any spiral spring required. The Patentee is consequently able to supply efficient springs at a less cost than any other parties can do. Purchasers are guaranteed in the use of these springs.

The New England Car Company have no right to make an India-rubber Spring with a Bolt through the centre. All companies using such a spring are liable to an action.

Fuller's spring has been used nearly four years with complete success. It is applicable equally to Passenger and Freight Cars, to Locomotives and Tenders. Bumpers and Draw Springs are always kept on hand, which merely require screwing to a car. It has lately been applied also to several kinds of Machines.

Action will be brought against all persons infringing upon these patents.

The subscriber will show Models and Drawings of the various modes of application to Cars, Machines, Omnibuses, &c.

G. M. KNEVITT, Agent.

Principal office, No. 78 Broad st., New York.

Branch office, Messrs. James Lee & Co.'s, No. 18 India Wharf, Boston.

Mr. Hale, the President of the Boston and Worcester Railroad, wrote an article concerning Fuller's Springs. The "New England Car Company" take the liberty of publishing that article, omitting, however, a very important part; it is therefore given in full now, and the portion omitted by the New England Car Company is printed in italics, that the public may judge the manner in which this "company" pervert Mr. Hale's meaning.

[From the Boston Advertiser of the 7th June].

INDIA RUBBER SPRINGS FOR RAILROAD CARS.

"Of the numerous uses to which the wonderful elasticity and durability of India rubber, renders this material applicable, we are hardly aware of one, in which it has been more successful than in forming springs for railroad cars. We have had occasion to observe, for some months past, its application to this use, on one of the passenger cars on the Newton special train of the Boston and Worcester railroad. It is there used not only for the springs on which the car rests, but for the springs attached to the draw bar, at each end of the car, to prevent any jar on the sudden commencement, or interruption of the motion of the car. For both these purposes it seems to be admirably adapted, and we do not learn that during that period in which it has been used, any defect has been discovered. It renders the movements of the car extremely easy, and protects it more effectually, we think, than any other spring we have seen in use, from every harsh or unpleasant motion, either vertical or horizontal. It is also simple in its form and application, extremely light, and little liable to get out of repair. During the period of some months in which we have seen the springs in operation, there is no apparent wear or diminution of its efficiency. Each spring is composed of several circular layers of rings of India rubber, a thin metallic plate of the same size being interposed between each of the layers. From the simplicity of its form, it cannot be expensive, and it admits of being made more or less elastic almost at pleasure. The invention, we understand, was first patented in England, where it has been introduced into general use on several of the principal railroads, and we have no doubt it will come into very extensive use in this country. The patent for this invention, we understand, has been granted to Mr. W. C. Fuller, in England and France, and also in this country. Mr. Kneivitt, of New York, is the agent for the patentees in the United States, and he has established a branch office for the supply of the article in this city, as may be learned from an advertisement in another column of this paper."

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.
Jan. 20, 1849.

RAILROAD SCALES, ETC.

FAIRBANKS' RAILROAD SCALES.—THE subscribers are prepared to construct at short notice, Railroad and Depot Scales, of any desired length and capacity. Their long experience as manufacturers—their improvements in the construction of the various modifications, having reference to strength, durability, retention of adjustment, accuracy of weight and dispatch in weighing—and the long and severe tests to which their scales have been subjected—combine to ensure for these scales the universal confidence of the public.

No other scales are so extensively used upon railroads, either in the United States or Great Britain;—and the managers refer with confidence to the following in the United States.

Eastern Railroad.	Boston & Maine Railroad.
Providence Railroad.	Providence and Wor. Road.
Western Railroad.	Concord Railroad.
Old Colony Railroad.	Fitchburg Railroad.
Schenectady Railroad.	Syracuse and Utica Road.
Balt. and Ohio Railroad.	Baltimore and Susq. Road.
Phila. & Reading Road.	Schenykill Valley Road.
Central (Ga.) Railroad.	Macon and Western Road.
New York and Erie Railroad.	

And other principal Railroads in the Western, Middle and Southern States.

E. & F. FAIRBANKS & CO.

St. Johnsbury, Vt.

Agents, } FAIRBANKS & Co., 81 Water st., N. York.
A. B. NORRIS, 196 Market st., Philadelphia.
April 22, 1849. ly*17

RAILROAD SCALES.—THE ATTENTION of Railroad Companies is particularly requested to Ellicott's Scales, made for weighing loaded cars in trains, or singly, they have been the inventors, and the first to make Platform Scales in the United States;—supposing that an experience of Twenty years has given him a knowledge and superior advantage in the business.

The levers of our scales are made of wrought iron, all the bearers and fulcrums are made of the best cast steel, laid on blocks of granite, extending across the pit, the upper part of the scale only being made of wood. E. ELLICOTT has made the largest Railroad Scale in the world, its extreme length was One Hundred and Twenty Feet, capable of weighing ten loaded cars at a single draft. It was put on the Mine Hill and Schuylkill Haven Railroad.

We are prepared to make scales of any size to weigh from five pounds to two hundred tons.

ELLICOTT & ABBOTT,

Factory, 9th st., near Coates, cor. of Melon st.
Office, No. 3, North 5th street,
Philadelphia, Pa.
ly25

TO RAILROAD COMPANIES AND BUILDERS OF MARINE AND LOCOMOTIVE ENGINES AND BOILERS.

PASCAL IRON WORKS.

WELDED WROUGHT IRON TUBES

From 4 inches to 1 in calibre and 2 to 12 feet long, capable of sustaining pressure from 400 to 2500 lbs. per square inch, with Stop Cocks, T. L., and other fixtures to suit, fitting together, with screw joints, suitable for STEAM, WATER, GAS, and for LOCOMOTIVE and other STEAM BOILER FLUES.



Manufactured and for sale by

MORRIS, TASKER & MORRIS.

Warehouse S. E. Corner of Third & Walnut Streets,
PHILADELPHIA.

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes, from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for railroads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, Agent.

Albany Iron and Nail Works, Troy, N. Y.

The above Spikes may be had at factory prices, of Erastus Corning & Co., Albany; Merritt & Co., New York; E. Pratt & Brother, Baltimore, Md.

CAR MANUFACTORY, CINCINNATI, OHIO.



KECK & DAVENPORT would respectfully call the attention of Railroad Companies in the West and South to their establishment at Cincinnati. Their facilities for manufacturing are extensive, and the means of transportation to different points speedy and economical. They are prepared to execute to order, on short notice, Eight-Wheeled Passenger Cars of the most superior description. Open and Covered Freight Cars, Four or Eight-Wheel Crank and Lever Hand Cars, Trucks, Wheels and Axles, and Railroad Work generally.

Cincinnati, Ohio, Oct. 2, 1848.

Norwich Car Factory, NORWICH, CONNECTICUT.

At the head of navigation on the River Thames, and on the line of the *Norwich & Worcester Railroad*, established for the manufacture of

RAILROAD CARS,
OF EVERY DESCRIPTION, VIZ:
PASSENGER, FREIGHT AND HAND CARS,
ALSO, VARIOUS KINDS OF
ENGINE TENDERS AND SNOW-PLOUGHS.
TRUCKS, WHEELS & AXLES

Furnished and fitted at short notice.

Orders executed with promptness and despatch.

Any communication addressed to
JAMES D. MOWRY,

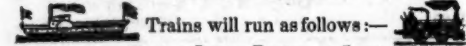
General Agent,
Norwich, Conn.,

Will meet with immediate attention.

RAILROADS.

BOSTON AND PROVIDENCE RAILROAD.

On and after MONDAY, APRIL 2d, the



Trains will run as follows:—
Steamboat Train—Leave Boston at 5 pm
Leaves Providence on the arrival of the train from Stonington.

Accommodation Trains—Leave Boston at 8 am., and 4 pm. Leave Providence at 8½ am., and 4 pm.

Dedham Trains—Leave Boston at 8½ am, 12 m., 3½, 6½, and 10½ pm. Leave Dedham at 7½, am., 2½, 5, and 8 pm.

Stoughton Trains—Leave Boston at 1 am., and 5½ pm. Leave Stoughton at 11½ am., and 3½ pm.

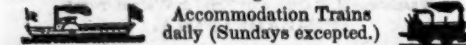
Freight Trains—Leave Boston at 11 am., and 6 pm. Leave Providence at 4 am., and 740 am.

On and after Wednesday, Nov. 1, the **DEDHAM TRAIN** will run as follows: Leave Boston at 9 am., 12 m., 3½, and 10½ pm. Leave Dedham at 8, 10½, am., 1½, 4½, and 9 pm.

WM. RAYMOND LEE, Sup't.

NORWICH AND WORCESTER RAILROAD.

Summer Arrangement.—1849.



Accommodation Trains daily (Sundays excepted.)

Leave Norwich at 6 am., 12 m., and 2 55 pm.

Leave Worcester at 7½ and 10½ am., and 4½ pm., connecting with the trains of the Boston and Worcester, Providence and Worcester, Worcester and Nashua and Western railroads.

New York & Boston Line. Railroad & Steamers. Leave New York and Boston daily, Sundays excepted, at 5 pm.—At New York from pier No. 1, North River.—At Boston from corner Lincoln and Beach streets, opposite United States Hotel. The steamboat train stops only at Framingham, Worcester, Danielsonville and Norwich.

Freight Trains leave Norwich and Worcester daily, Sundays excepted.—From Worcester at 6½ am., from Norwich at 7 am.

Fares are Less when paid for Tickets than when paid in the Cars.

S. H. P. LEE, Jr., Sup't.

EASTERN RAILROAD, WINTER ARRANGEMENT.

On and after MONDAY, Oct. 2, 1848, Trains will leave Eastern Railroad Depot, Eastern Avenue, Commercial-street, Boston, daily, (Sundays excepted.)

For Lynn, 7, 9 11½, a.m., 12, 2½, 3½, 4½, 6, p.m.
Salem, 7, 9, 11½, a.m., 12, 2½, 3½, 4½, 6, p.m.
Manchester, 9, a.m., 3½, p.m.
Gloucester, 9, a.m., 3½, p.m.
Newburyport, 7, 11½, a.m., 2½, 4½, p.m.
Portsmouth, 7, a.m., 2½, 4½, p.m.
Portland, Me., 7, a.m., 2½, p.m.

And for Boston,

From Portland, 7½, am., 3, pm.
Portsmouth, 7, 9½, am., 5½, pm.
Newburyport, 7½, 10½, am., 2, 6, pm.
Gloucester, 7½, am., 3½, pm.
Manchester, 8, am., 3½, pm.
Salem, 7½, 8½, 9, 10½, 11-40, am., 2½, 3, 4½, 7, pm.
Lynn, 7½, 8½, 9½, 10½, 11-55, am., 2½, 3½, 4½, 7½, pm.

On Monday, Wednesday, and Friday, a train will leave Boston for Lynn and Salem, at 7 o'clock; p.m.

On Tuesday, Thursday, and Saturday, a train will leave EAST BOSTON for Lynn and Salem, at 10½ o'clock, pm.

* Or on their arrival from the East.

MARBLEHEAD BRANCH.

Trains to leave

Marblehead for Salem, 7½, 8½, 10, 11-25, am.

2, 4½, 6½, pm.

Salem for Marblehead, 7½, 9½, 10½, am., 12½, 3½, 5½, 6½, pm.

GLOUCESTER BRANCH.

Trains leave

Salem for Manchester at 9½, am., 4½, pm.

Salem for Gloucester at 9½, am., 4½, pm.

Trains leave

Gloucester for Salem at 7½, am., 3½, pm.

Manchester for Salem at 8, am., 3½, pm.

Freight Trains each way daily. Office 1 Merchants' Row, Boston.

Feb. 3. JOHN KINSMAN, Superintendent.

ESSEX RAILROAD—SALEM to LAWRENCE,

through Danvers, New Mills, North Danvers, Middleton, and North Andover.

On and after Monday, Oct. 2, 1848, trains leave daily (Sundays excepted.) Eastern Railroad Depot, Washington-st.

Salem for South Danvers at 7.45, 9, am., 12.45, 3.15, 6.45, pm.

Salem for North Danvers at 7.45, 9, am., 12.45, 3.15, pm.

Salem for Lawrence, 9, am., 3.15, pm.

Danvers " 9.10, am., 3.15, pm.

North Danvers " 9.20, am., 3.35, pm.

Middleton " 9.30, am., 3.45, pm.

North Andover " 10, am., 4.20, pm.

South Danvers for Salem at 7.45, 8.45, 11.30, am.

2, 4.55, pm.

North Danvers " 8.20, 11.10, am., 1.40, 5.40, pm.

Middleton " 11, am., 4.30, pm.

North Andover " 10.35, am., 5.05, pm.

Lawrence " 10.30, am., 5, pm.

* These trains will not stop at Frye's Mills nor Grove-st.

JOHN KINSMAN, Superintendent.

Salem, Oct. 2, 1848.

BOSTON AND MAINE RAILROAD.

Spring Arrangement, 1849.

Outward Trains from Boston

For Portland at 6½ am. and 2½ pm.

For Rochester at 6½ am., 2½ pm.

For Great Falls at 6½ am., 2½, 4½ pm.

For Haverhill at 6½ and 12 m., 2½, 4½ 6 pm.

For Lawrence at 6½, 9, am., 12 m., 2½, 4½, 6, 7½ pm.

For Reading 6½, 9 am., 12 m., 2½, 4½, 6, 7½, 9½ pm.

Inward trains for Boston

From Portland at 7½ am., 3 pm.

From Rochester at 9 am., 4½ pm.

From Great Falls at 6½, 9½ am., 4½ pm.

From Haverhill at 7, 8½ 11 am., 3, 6½ pm.

From Lawrence at 6, 7½, 8½, 11½, am., 1½, 3½, 7 pm.

From Reading at 6½, 7½, 9 am., 12 m., 2, 3½, 6, 7½ pm.

MEDFORD BRANCH TRAINS.

Leave Boston at 7, 9½ am., 12½, 2½, 5½, 6½, 9½ pm.

Leave Medford at 6½, 8, 10½ am., 2, 4, 5½, 6½, pm.

* On Thursdays, 2 hours; on Saturdays, 1 hour later.

CHAS. MINOT, Super't.

Boston, March 27, 1849.

NEW YORK ANDERIE RAILROAD. WINTER ARRANGEMENT.

On Monday, January 1st, and until further notice, the trains will run as follows:

FOR PASSENGERS.

Leave NEW YORK, (foot of Duane street,) at 7 o'clock, am., by steamer Erie. Leave Port Jervis at 6 o'clock am.

An Accommodation Train, for passengers and milk, will run in connection with the steamboat towing the Freight Barge, leaving New York and Port Jervis at 4 o'clock pm.

FOR FREIGHT.

Leave New York at 4 o'clock, pm., per steamboat New Haven, and Barges.

The Road will be opened to Binghamton and intermediate places on Monday, the 8th January, 1849, on which day, and until further notice, the through trains will run as follows:

FOR PASSENGERS.

Leave New York from Duane street Pier, at eight o'clock, and Binghamton at 7 o'clock, am., daily.

FOR FREIGHT.

Leave New York at 4 o'clock, pm., and Binghamton at 7 o'clock, am., daily, Sundays excepted.

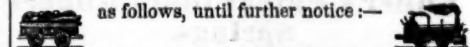
H. C. SEYMOUR, Superintendent.

January 1st, 1849.

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NEW YORK & HARLEM RAILROAD, DAILY. WINTER ARRANGEMENT.

On and after December 1st, 1848, the Cars will run as follows, until further notice:—



Trains will leave the City Hall, New York, for Harlem and Morrisiana at 7, 9, 9.30, 11, am. 12 m., 2, 4, 4.15, 5.30, pm.

Trains will leave the City Hall, New York, for Fordham and Williams' Bridge, at 7.30 and 9.30 am., 12 m., 2, 4, 15, 5.30 pm.

Trains will leave the City Hall, New York, for Hunt's Bridge, Underhill's and Hart's Corners, at 9.30 am., 4.15 pm.

Trains will leave the City Hall, New York, for Tuckahoe and White Plains, at 7.30 and 9.30 am., 3 and 4.15 pm.

Trains will leave Davis' Brook, Pleasantville, Chapequa, Mount Kisko, Bedford, Mechanicsville, Purdy's and Croton Falls, at 7.30 and 9.30 am., 3 pm.

NOTICE—Passengers are reminded of the great danger of standing upon the platform of the cars, and hereby notified that the practice is contrary to the rules of the Company, and that they do not admit any responsibility for injury sustained by any passenger upon the platforms, in case of accident.

Returning to New York will leave Morrisiana and Harlem at 7.20, 8.50, 10 am., 12m., 1.35, 3, 3.45, 5, 5.35 pm.

Fordham and William's Bridge at 7, 8.30, 9.50 am., 1.15, 3.25, 5.20 pm.

Hunt's Bridge at 8.20, am., 3.18 pm.

Underhill's Road at 8.10 am., 3.08 pm.

Tuckahoe at 8.05, 9.30 am., 3.05, 5 pm.

Hart's Corners at 7.55 am., 2.52 pm.

White Plains at 7.45, 9.10 am., 2.45, 4.40 pm.

Davis' Brook at 9 am., 2.35, 4.30 pm.

Pleasantville at 8.49 am., 2.20, 4.19 pm.

Mount Kisko at 8.30 am., 2, 4 pm.

Bedford at 8.25 am., 1.55, 3.55 pm.

Mechanicsville at 8.15 am., 1.45, 3.45 pm.

Purdy's at 8.05 am., 1.35, 3.35 pm.

Croton Falls, at 8 am., 1.30, 3.30 pm.

The trains for Harlem and Morrisiana leaving City Hall at 7, 9, 9.30, 11, 12, 2, 4, and 5.30, and from Morrisiana and Harlem at 7.20, 8.10, 12, 1.35, 3, 3.45, and 5 o'clock, will land and receive passengers at 27th st., 42d, 51st, 61st, 79th, 86th, 109th, 115th, 125th, and 132d streets.

The 7.30 am., and 3 pm. Trains from New York to Croton Falls, and the 8 am. Train from Croton Falls will not stop between White Plains and New York, except at Tuckahoe, Williams' Bridge and Fordham.

A car will precede each train ten minutes to take up passengers in the city. The last car will not stop, except at Broome st. and 32d street.

Freight Trains leave New York at 6 am. and 1 pm.: leave Croton Falls at 7 am. and 2.30 pm., Sundays excepted.

NOTICE—On Sundays the 7 am. to Harlem and Morrisiana, returning at 8 o'clock, and the 7.30 am. to Croton Falls, returning 1.30 pm., will be omitted, and the 7 am. from Williams Bridge will leave at 7.40, and Morrisiana and Harlem at 8 o'clock am.

ST. LAWRENCE & ATLANTIC RAILROAD COMPANY.

Notice is hereby given that the Trains run twice per day between Montreal and St. Hyacinthe, leaving each terminus alternately, until further notice.

The first train starts from St. Hyacinthe at 7 o'clock a.m., reaching Montreal at 8½ a.m., leaving Montreal at 2 p.m., and reaching St. Hyacinthe at 3½ p.m.

The second train leaves Montreal at 9 o'clock, a.m., reaching St. Hyacinthe at 10½ a.m., leaving St. Hyacinthe at 4 p.m., reaches Montreal at 5½ p.m.

THOMAS STEERS, Secretary.

March 31, 1849.

BALTIMORE AND SUSQUEHANNA RAILROAD.—Reduction of Fare. Morning and Afternoon Trains between Baltimore and York.—The Passenger Trains

run daily, except Sundays, as follows:

Leave Baltimore at	9 am. and 3½ pm.
Arrive at	9 am. and 6½ pm.
Leave York at	5 am. and 3 pm.
Arrive at	12½ pm. & 8 pm.
Leave York for Columbia at	1½ pm. & 8 am.
Leave Columbia for York at	8 am. & 2 pm.

Fare to York	\$1 50
" Wrightsville	2 00
" Columbia	2 12½

Way points in proportion.

PITTSBURG, GETTYSBURG, AND HARRISBURG.

Through tickets to Pittsburg via stage to Harrisburg

Or via Lancaster by railroad

Through tickets to Harrisburg or Gettysburg

In connection with the afternoon train at 3½ o'clock, a horse car is run to Green Spring and Owing's Mill, arriving at the Mills at

Returning, leaves Owing's Mills at

31 ly Ticket Office, 63 North st.

GEORGIA RAILROAD. FROM AUGUSTA TO ATLANTA—171 MILES.

AND WESTERN AND ATLANTIC RAILROAD, FROM ATLANTA TO DALTON, 100 MILES.

This Road, in connection with the South Carolina Railroad, and Western and Atlantic Railroad, now forms a continuous line, 408 miles in length, from Charleston to Dalton (Cross Plains) in Murray county, Ga. 32 miles from Chattanooga, Tenn.

RATES OF FREIGHT.

		Between Augusta and Dalton, 271 miles.	Between Charleston and Dalton, 408 miles.
1st class	Boxes of Hats, Bonnets, and Furniture, per cubic foot	\$0 18	\$0 28
2d class	Boxes and Bales of Dry Goods, Saddlery, Glass, Paints, Drugs, and Confectionary, per 100 lbs.	1 00	1 50
3d class	Sugar, Coffee, Liquor, Bagging, Rope, Cotton, Yarns, Tobacco, Leather, Hides, Copper, Tin, Feathers, Sheet Iron, Hollow ware, Castings, Crockery, etc.	0 60	0 85
4th class	Flour, Rice, Bacon, Pork, Beef, Fish, Lard, Tallow, Beeswax, Bar Iron, Ginseng, Mill Gearing, Pig Iron, and Grindstones, etc.	0 40	0 65
	Cotton, per 100 lbs.	0 45	0 70
	Molasses per hoghead	8 50	13 50
	" " barrel	2 50	4 25
	Salt per bushel	0 18	
	Salt per Liverpool sack	0 65	
	Ploughs, Corn Shellers, Cultivators, Straw Cutters, Wheelbarrows	0 75	1 50

German or other emigrants, in lots of 20 or more, will be carried over the above roads at 2 cents per mile.

Goods consigned to S. C. Railroad Company will be forwarded free of commissions. Freight payable at Dalton.

44*ly Sup't of Transportation.

LITTLE MIAMI RAILROAD.—WINTER ARRANGEMENT.

Change of Hours. On and after Thursday, November 9th, 1848, until further notice, Passenger Trains will run as follows:

Leave Depot East Front street at 9½ o'clock, a.m., and 2½ o'clock, p.m., for Milford, Foster's Crossings, Deerfield, Morrow, Waynesville, Spring Valley, Xenia, Yellow Springs, and Springfield.

Returning, leave Springfield, at 2½ o'clock, and 9½ o'clock, a.m.

Passengers for New York, Boston, and intermediate points, should take the 9½ o'clock, a.m., Train from Cincinnati.

Passengers for Columbus, Zanesville, Wheeling and intermediate towns, should take the 9½ o'clock, a.m., Train.

The Ohio Stage Company are running the following lines in connection with the Trains:

A Daily Daylight Line to Columbus from Springfield in connection with the Morning Train from Cincinnati. Also, Daily Lines to Columbus, from Xenia and Springfield, connecting with the 2½ o'clock, p.m. Train from Cincinnati.

The 2½ p.m., Train from Cincinnati, and 2½ a.m., Train from Springfield, are intended for the accommodation of Way Passengers only, and will be eight hours on the road.

Fare from Cincinnati to Xenia

Do do Springfield

Do do Sandusky City

Do do Buffalo

Do do Columbus

For other information and through tickets, apply at the Ticket Office on Broadway, near Front-st., Cincinnati.

W. H. CLEMENTS, Superintendent.

The Company will not be responsible for Baggage exceeding 50 dollars in value, unless the same is returned to the Conductors or Agent, and freight paid at the rate of a passage for every 500 dollars in value to that amount.

BALTIMORE AND OHIO RAILROAD, MAIN STEM.

The Train carrying the Great Western Mail leaves Baltimore every morning

at 7½, and Cumberland at 8 o'clock

passing Ellicott's Mills, Frederick, Harper's Ferry, Martinsburg and Hancock, connecting daily each way with—the Washington Trains at the Relay House seven miles from Baltimore, with the Winchester Trains at Harper's Ferry—with the various railroad and steamboat lines between Baltimore and Philadelphia, and with the lines of Post Coaches between Cumberland and Wheeling and the fine Steamboats on the Monongahela Slack Water between Brownsville and Pittsburgh.

Time of arrival at both Cumberland and Baltimore 5½ P. M. Fare between these points \$7, and 4 cents per mile for less distances.

Fare through to Wheeling \$11, and time about 36 hours, to Pittsburgh \$10, and time about 32 hours.

Through tickets from Philadelphia to Wheeling \$13, to Pittsburgh \$12. Extra train daily, except Sundays, from Baltimore to Frederick at 4 P. M., and from Frederick to Baltimore at 8 A. M.

WASHINGTON BRANCH.

Daily trains at 9 A. M., and 5 P. M., and 12 at night from Baltimore, and at 6 A. M. and 5½ P. M. from Washington, connecting daily with the lines North, South and West, at Baltimore, Washington, and the Relay House. Fare \$1 60 through between Baltimore and Washington, in either direction, 4 cents per mile for intermediate distances.

PHILADELPHIA, WILMINGTON, & BALTIMORE RAILROAD.

Summer Arrangement. April 1st, 1849.—Fare \$3.

Leave Philadelphia 8½ a.m., and 10 p.m.

Leave Baltimore 9 a.m. and 8 p.m.

Sunday—Leave Philadelphia at 10 p.m.

" " Baltimore at 8 p.m.

Trains stop at way stations.

Charleston, S. C.

Through tickets Philadelphia to Charleston, \$20.

Pittsburg and Wheeling.

Through ticket, Philadelphia to Pittsburg, \$12.

" " Wheeling, 13.

Through tickets sold at Philadelphia office only.

Wilmington Accommodation.

Leave Philadelphia at 12 m. 4 and 7 p.m.

Leave Wilmington at 7½ a.m., 4 and 7 p.m.

Newcastle Line.

Leave Philadelphia at 2½ p.m.—Baltimore at 1½ p.m.

Fare \$3.—Second class, \$2.

N.B.—Extra baggage charged for.

I. R. TRIMBLE, Gen. Supt.

PHILADELPHIA & READING RAILROAD.

Passenger Train Arrangement for 1848.

A Passenger Train will leave Philadelphia and Pottsville daily, except Sundays, at 9 o'clock a.m.

The Train from Philadelphia arrives at Reading at 12 18 m.

The Train from Pottsville arrives at Reading at 10 43 a.m.

Fares. Miles. No. 1. No. 2

Between Phila. and Pottsville, 92 \$3.50 and \$3.00

" " Reading 59 2.25 and 1.90

" " Pottsville 34 1.40 and 1.20

Five minutes allowed at Reading, and three at other way stations.

Passenger Depot in Philadelphia corner of Broad and Vine streets.

CENTRAL RAILROAD—FROM SAVANNAH to Macon. Distance 190 miles.

This Road is open for the transportation of Passengers & Freight

Rate of Passage \$3 00. Freight—

On weight goods generally, 50 cts. per hundred

On measurement goods 13 cts. per cubic ft.

On bris. wet (except molasses and oil) 1 50 per barrel.

On bris. dry (except lime) 80 cts. per barrel.

On iron in pigs or bars, castings for mills, and unboxed machinery 40 cts. per hundred

On hhds. and pipes of liquor, not over 120 gallons \$5 00 per hhd.

On molasses and oil \$5 00 per hhd.

Goods addressed to F. WINTER, Agent, forwarded free of commission.

THOMAS PURSE, Gen'l Sup't Transportation.

SOUTH CAROLINA RAILROAD.—A Passenger Train runs daily from Charleston, on the arrival of the boats from Wilmington, N. C., in connection with trains on the Georgia, and Western and Atlantic Railroads—and by stage lines and steamers connects with the Montgomery and West Point, and the Tusculum Railroad in N. Alabama.

Fare through from Charleston to Montgomery daily \$26 50

Fare through from Charleston to Huntsville, Decatur and Tusculum 22 00

The South Carolina Railroad Co. engage to receive merchandize consigned to their order, and to forward the same to any point on their road; and to the different stations on the Georgia and Western and Atlantic Railroad; and to Montgomery, Ala., by the West Point and Montgomery Railroad.

JOHN KING, Jr., Agent.

THE WESTERN AND ATLANTIC RAILROAD.—This Road is now in operation to Oothcaloga, a distance of 80 miles, and connects daily (Sundays excepted) with the Georgia Railroad.

From Kingston, on this road, there is a tri-weekly line of stages, which leave on the arrival of the cars on Tuesday, Thursday and Saturday, for Warrenton, Huntsville, Decatur, and Tusculum, Alabama, and Memphis, Tennessee.

On the same days the stages leave Oothcaloga for Chattanooga, Jasper, Murfreesborough, Knoxville and Nashville, Tennessee.

This is the most expeditious route from the east to any of these places.

CHAS. F. M. GARNETT, Chief Engineer

PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, Agent.

Troy Iron and Nail Factory, Troy, N. Y.

TO LOCOMOTIVE AND MARINE ENGINE

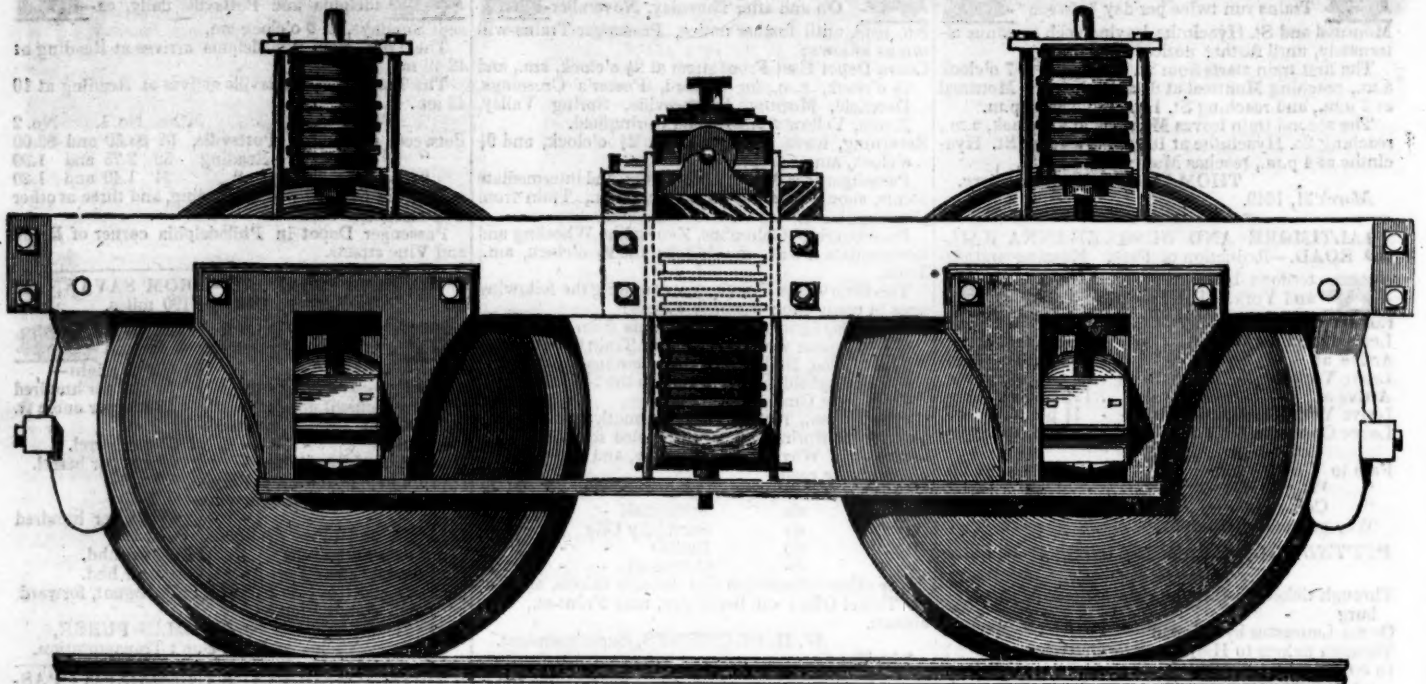
Boiler Builders. Pascal Iron Works, Philadelphia. Welded Wrought Iron Flues, suitable for Locomotives, Marine, and other Steam Engine Boilers, from 2 to 5 inches in diameter. Also, Pipes for Gas, Steam and other purposes; extra strong Tube for Hydraulic Presses; hollow Pistons for Pumps of Steam Engines etc. Manufactured and for sale by

MORRIS, TASKER & MORRIS,

Warehouse S. E. corner 3d and Walnut streets, Philadelphia.

FOWLER M. RAY'S

METALLIC INDIA RUBBER CAR SPRINGS.



THE NEW ENGLAND CAR COMPANY have introduced these Springs, and they are now in operation on every Railroad terminating in Boston, and several others in New England and the Middle States. Their qualities are well understood, or may be readily ascertained by every person interested to know them. They require no recommendation from the Company. The only known compound of India Rubber good for anything for this purpose is the Vulcanized India Rubber, invented by Charles Goodyear, of New Haven, and the application of it, and the form in which it is used, were invented by F. M. Ray, of New York. The right to manufacture and sell the substance itself for the purpose of Railroad Carriage Springs, as well as the form and application of it, are held exclusively by the New England Car Company. No other Company, or individual, has any right to sell or use it for such purpose, or has attempted so to use it in this country.

The New England Car Company guarantee the right to use the article they sell for Railroad Carriage Springs only, against all adverse rights, whether under patents or otherwise; and all persons and corporations are cautioned against a similar use of the article, when purchased of any other parties.

The Springs they sell are all manufactured in a uniform manner, and under the immediate inspection of their own Agent, and have been proved and known to answer the purpose. None have been manufactured in this country or imported from abroad besides their own, which would at all answer the purpose; and if any such should be produced, it cannot be used for Car Springs, while Goodyear's patents, and the right of the New England Car Company under them, remain in force.

The New England Car Company are now prepared to answer orders for all that may be called for, on reasonable notice, and uniform and equitable terms. They invite the most careful examination, and the severest scrutiny, into the merits of their Springs, wherever they have applied them. And if after such examination, your Company should judge it for their interest to adopt them, the N. E. Car Company would respectfully invite the patronage which they think they deserve, and are confident of receiving at your hands.

EDWARD CRANE, Agent,
Office 99 State-street.

Orders may also be left with **WM. RIDER & BROTHERS**, No. 58 Liberty-street, New York, or with **F. M. RAY, Agent,** 100 Broadway, N. Y.

The following article from the pen of **MR. HALE**, the President of the Boston and Worcester Railroad, expresses his opinion of this important improvement, as published in the Boston Daily Advertiser of June 7, 1848. He says:

"Of the numerous uses to which the wonderful elasticity and durability of India Rubber renders this material applicable, we are hardly aware of one in which it has been more successful than in forming springs for railroad cars. We have had occasion to observe, for some months past, its application to this use, on one of the passenger cars on the Newton special train of the Boston and Worcester railroad. It is there used, not only for the springs on which the car rests, but for the springs attached to the draw bar at each end of the car, to prevent any jar on the sudden advancement or interruption of the motion of the car. For both these purposes it appears to be admirably adapted, and we do not learn, that during the period in which it has been used, any defect in it has been discovered. It renders the movements of the car extremely easy, and protects it more effectually, we think than any other spring which we have ever seen in use, from every harsh or unpleasant motion, either vertical or horizontal. It is simple in its form and application, extremely light, and little liable to get out of repair. During the period of some months, in which we have seen the springs in operation, there is no apparent wear or diminution of their efficacy."

The above statement of Mr. Hale agrees with my own observation in all particulars.

WM. PARKER, Supt., B. & W. R. R.
June 8, 1848.

I fully concur in the foregoing statement, from practical observation of its use for the last five months, on the Boston and Worcester railroad corporation cars.

D. N. PICKERING, Jr.,
Supt. Car Building B. & W. R. R.
Boston, June 10, 1848.

The New England Car Company have introduced their Vulcanized India Rubber Car Springs on the roads with which we are respectively connected, and we fully concur with Mr. Hale in the above opinion of their character and properties.

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